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THE DOCTOR:

A MONTHLY REVIEW

OF

BRITISH AND FOREIGN

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BOSTON MEDICAL
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THE DOCTOR.

VOL. IV., 1874.

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CHRONICLE.

THE CURE OF CONSUMPTION.

Some interesting statistics are given by Massini, of Basle, in a communication on the "Curability of Pulmonary Phthisis" in the *Deutsches Archiv. für Klinische Medicin.*, Bd. xi., Heft 4, 5.

Of 128 post-mortems of phthisical subjects from New year 1867 to the end of June, 1870, in the Basle Hospital, there were only 82 cases of caseous process without tuberculosis, and of these, 27 cases were of caseous pneumonia alone, 55 cases with coincident intestinal ulceration, and 17 cases with coincident laryngeal ulceration. In 46 subjects were miliary tubercles in different organs, most frequently in the lungs; of these, 37 cases had bilateral fresh caseous processes in the lungs. 4 had old caseous cicatrices in the lung apices, 3 had coincident caseous bronchial glands, and in only 2 could no caseous mass be demonstrated.

The percentage, thus, runs as follows: 64·1 per cent. pure phthisis (caseous) to 35·9 per cent. miliary tuberculosis, a relation closely corresponding to that given by Aufrecht (*Berlin Wochenschrift*, 1870, No. 7).

With regard to the second point, the curability of non-tuberculous phthisis, the author communicates the following pathologico-anatomical statistics:—

Of 228 deaths without manifestations of phthisis during life, 139 showed no signs of phthisis on post-mortem, 52 showed old adhesions at the apices, 55 old consolidations and cicatrices, 22 caseous or calcareous collections, 6 caseous or calcareous bronchial glands; in all thus 83 with positive evidences of the disease, a proof, therefore, of the curability not only of the chronic inflammatory, but also of the chronic destructive process in the lungs.

The presence or absence of fever was a point of high prognostic significance in a clinical point of view. Of 361 patients, 263 showed increase of temperature, and of these 131 died, that is, 49·8 per cent.; 98 were apyretic, and of these 3 died, that is, 3·1 per cent.

Numerous experiments as to the weight of the body showed an average loss of weight in 142 febrile cases of 32 pounds, and an average gain of weight in 66 non-febrile patients of 4·8 pounds.

CURE OF LARYNGEAL PHTHISIS.

Dr. Prosser James read a paper on "Laryngeal Phthisis" before the British Medical Association, of which an abstract has appeared in the *Journal*. He speaks of cures, and we are told that his object was, by specimens and coloured drawings, to correct some prevailing errors respecting this disease, and to show that it is not necessarily so rapidly fatal as commonly asserted. Cases in which the larynx is not affected until after considerable progress has been made in the disease in the lungs are very unfavorable. The author admitted the existence of primary laryngeal phthisis, occurring when the lungs were not perceptibly affected. He had met with such cases. Extreme anæmia of the laryngeal membrane had in many cases been found to precede consumption. It was not, of course, an infallible sign, but it was not to be neglected. A more important symptom was the existence of polypoid excrescences at the posterior commissure, which might resemble closely those seen in syphilis. Such growths might be simple; but in many cases of consumption this was the first symptom, and it was of graver import if there were any cachexia. Inflammation of the arytenoids was common, especially in secondary phthisis. The same condition might occur in catarrh. Hence some caution was to be observed respecting it. Swelling and thickening of the epiglottis was sometimes the most prominent symptom. Local swellings and thickenings of other parts were equally common through a large part of the progress of laryngeal phthisis. The false cords were particularly prone to take on diseased action. These swellings were to be distinguished from those of simple inflammation. The parts lost their transparency, and were the seat of deposit of a grayish or yellow matter. Ulceration was the next stage. In tubercular swellings or excrescences, erosion soon appeared, generally about the little yellow points that were seen. The true vocal cords were also liable to ulceration. Perichondritis with necrosis might occur. Among general symptoms cough and expectoration were slight or absent in pure laryngeal phthisis, but dyspnœa and dysphagia were almost always present. Most authors declared that laryngeal phthisis was necessarily and rapidly fatal. The author of the paper asserts that this form of consumption might be arrested; and most of the drawings were intended to prove this. The most fatal cases were those in which the laryngeal disease was secondary to pulmonary consumption. The later it appeared in these cases, the more rapid was its course. Among the cases arrested was one in which the lungs were also affected. The patient was a singer, and when first brought under the author's care had softening at the apex of one lung. On laryngoscopic examination, the epiglottis was seen to be thickened and its edge serrated by ulceration. The arytenoids were swollen. There was an ulcer on the left vocal cord. After several weeks of treatment the disease was completely arrested, and the patient resumed public singing. Each case must be treated according to circumstances. Excessive topical interference was most dangerous. Inhalations and the use of atomized fluids or sprays were the safest and best applications.

OXIDISED ETHERIAL OIL IN PHTHISIS.

Last year attention was drawn to oxidised oils in phagedæna. Now it may be stated that Cheron (*Memorabilia*) has attained successes with inhalations of such oils in phthisis, while those devoid of oxygen, as turpentine, are useless. Camphor is the typical oil, but all oxidised ones can be used—ol. cedri and ol. laur. camph. are agreeable. The elastic fibres of the sputa diminished under the treatment, and finally disappeared. Pyrexia and rapid waste contra-indicate the treatment which is most adapted for slowly progressing phthisis with copious expectoration. It is said that the cough, expectoration, and dyspnœa diminish, the appetite and weight increase, and hectic disappears under this treatment. Other treatment can be employed at the same time.

DR. BRUNELLI ON ELECTRO-THERAPEUTICS.

Dr. Brunelli (*La Independencia Medica*) has published the results of a three years' clinical treatment of nervous disease at the Santo Spirito in Rome. With respect to cerebral paralysis, of 42 cases, 18 were treated by Faradic electricity, 18 with the galvanic current, and 6 by the mixed method.

Of the cerebral hemiplegias treated by Brunelli, those on the left side derived the less benefit from treatment, and especially was this the case where contractions were present frequently, whilst in the right side difficulty of speech was predominant, amounting sometimes to true aphasia.

In the second category the author speaks of spinal palsies, of which, among these cases, he observed 6 monoparaplegias, and the rest double paraplegias; 4 of rheumatic origin (meningo-myelitis); 3 produced by cerebro-spinal fever of short duration; 3 originating in circumscribed effusions of blood (all of which were of the character of monoparaplegia); 2 cases produced by grave-ileo-typhlitis; 1 by a wound, and the rest by inflammation or parenchymatous myelitis more or less acute. Many of these cases were cured by recourse to a mixed method.

The facial palsies, the rheumatic hysterical, or those caused by the traumatic lesion of the mixed nerves, which the author classifies among peripheric paralyses, have afforded numerous triumphs to electro-therapeutics. The gravest facial palsies cited by Brunelli were all cured notwithstanding the age of some of these, The author divides neuralgia into five divisions: there were 5 cases of sciatica, 3 brachial, 2 cervico-brachial, 1 of gastralgia, 3 lumbo-abdominal, 1 plantar, and 1 of sympathetic *tic*. The galvanic current as usual has given Dr. Brunelli satisfactory results, and in some of these cases the cure was very rapid, especially in rheumatic neuralgia.

With respect to cases of sclerosis in disseminated spots, ataxia, chorea, scriveners' palsy, the author does not seem to register any cure of these cases, although some were much alleviated by treatment.

Anæsthesia accompanied with pain and simple anæsthesia offer some cases of cure in Dr. Brunelli's clinique; and one case of ambliopia of the right eye is mentioned with anæsthesia of the corresponding half of the scalp, cured by the galvanic current.

Idiopathic or peripheral contractions, according to the author, form the seventh category, of which he had only three cases; and in the eighth category, he presents us with different cases of convulsions, among which are epileptics. Of 13 epileptics treated by the galvanic current he cured 2, 3 were notably benefited, and the rest remained *in statu quo*. The author used for galvanisation of the brain a Daniell's battery of from 6 to 10 elements.

In the numerous patients affected with arthritis, whether simple or multiple, rheumatic or traumatic, the galvanic current produced those excellent results expected from it in such cases; so that Dr. Brunelli believes that many other inflammations, such as the rheumatic and traumatic inflammation of the joints, ought to be treated in this way. In cases where there is muscular atrophy of the affected limb, the author prefers to raise the nutritive powers by galvanisation of the sympathetic. From the cases of progressive muscular atrophy treated by Dr. Brunelli, and the slight results obtained in this affection, he deduces that electricity is but slightly efficacious in combating this terrible disease; as little confidence has he in the treatment of pseudo-hypertrophic palsies.

PAINLESS SURGERY.

Dr. Edmund Andrews communicates to the *Chicago Medical Examiner* an account of some experiments made by him with a view of ascertaining whether it was not possible, by a specially contrived instrument, to make painless incisions without the use of anæsthetics. Experience shows that mechanical injuries received from bodies moving with a great velocity are painless. Dr. Andrews proposes to utilise this fact in performing operations. Several surgical instruments have been in use, designed to diminish pain by increased velocity, such as the spring-lancet, spring-vaccinator, &c., but none are completely painless. Dr. Andrews commenced a series of experiments with a view of determining whether it was possible to devise an instrument small enough for use, and yet moving with sufficient velocity to make painless incisions. From various observations he was led to conclude that the minimum velocity necessary for the purpose was about 100 or 150 feet a second. At the outset he was confronted by two difficulties, viz.—(1) the difficulty of obtaining a sufficient velocity in a small instrument, and (2) the extreme sensitiveness of a surgical patient. His first experiment was made with an instrument which, by means of a rubber spring, shot out a blade lengthwise; but observations on the violent jerk which the blade experienced at its stopping-point convinced him that this instrument was not safe, since the knife might break loose and shoot into the body like an arrow, possibly wounding some vital organ in its course. He therefore had one constructed in which the cutting part swept round a circle with great velocity, so as to obviate any risk of shooting endways in the body in case of breakage. With a spring having a tension of fifty pounds a velocity of seventy feet a second was attained. This was less than half of what was necessary, so that patients on whom it was tried still experienced some suffering. Dr. Andrews has not yet succeeded in constructing an instrument with a sufficient velocity to make operations totally painless, but hopes it may be done in time, and his experiments are at any rate interesting, as opening up a new field in operative surgery.

For very high velocities Dr. Andrews says it is a question whether a small circular saw would not be the best cutting instrument.

DIPHTHERIA.

Dr. Giuseppe Casagnado publishes an interesting communication in the *Raccolglitore Medico* (Dec. 20), passing in review the numerous remedies recommended in this disease, and stating that he has much faith in chlorate of potass. He also finds this drug specific in many forms of stomatitis, and trusts to it in the inflammation incident to mercurialisation, and says that his colleague, Dr. Donati, has employed the chlorate with equal success. Both these gentlemen seem to regard the exudation of diphtheria and of croup as due to parasites, and they look upon the chlorate of potass as the chief parasiticide for the diphtherial fungus.

They join many recent writers in condemning caustics. These violent agents are certainly likely to prove injurious. Our readers, will however, be slow to accept the fungus theory as satisfactory, and will perhaps doubt the propriety of making so slight a division between diphtheria, croup, and malignant sore throat.

GLANDULAR ENLARGEMENT IN DIPHTHERIA.

M. Bouchut regards this complication as adenitis with diffused inflammation of the surrounding tissues. The pus is slow to collect into an abscess, and when this is found there is always deeper mischief. Nevertheless, Bouchut recommends (*Bull. de Thér.*) early opening as the surest mode of cure. If necessary he uses a drainage tube. These remarks apply to enlarged cervical glands in scarlatina and croup as well as diphtheria.

HIPPOPHAGY—MEDAL OF HONOUR—HORSE DINNER.

During the third quarter of the year 1867, 418 horses, 7 donkeys, and 10 mules were given up for the consumption of Paris. During the third quarters of the following years these are the figures. In 1869, 599 horses, 27 donkeys, 0 mules; in 1871, 624 horses, 82 donkeys, 10 mules; in 1873, 1,548 horses, 140 donkeys, and 15 mules, which furnished 303,971 kilogrammes nett of meat, that is, without the heart, liver, brains, tongue, &c., which are used like those of the bullock.

There are in the capital about forty horse shambles, which are inspected by veterinary surgeons from the administration. The price of the meat is about half that of beef for the corresponding pieces. Horses fit for food, which used to be worth from 30 to 50 francs, are now sold for 130 to 150 francs on an average. Those horses which were bought by horse-dealers, whose interest it was to take no care of them, are now sold to butchers who find it to their advantage to house and feed them enough to have good and fine meat.

In order to encourage butchers to follow this trade, the Committee of Horse-meat gives from time to time medals of honour to those who distinguish themselves the most. At the meeting held on the 21st November, 1873, one of these medals was presented to M. Victor Tètard, who had established for his business six butchers' shops, a slaughter-house, and two good stables. By the figures reported above it will be seen that the consumption of horse-flesh has made rapid progress in Paris; it has made the same in the provinces, as for instance, in Rheims, Sedan, Lyons, &c. Now, many foreign countries lose this article of food; at the same time, the example of France is beginning to draw attention, as will be seen in the following remarks made by M. Ducroix in *l'Abeille Médicale*, a practical journal we have often had occasion to quote, and the learned editor of which, Dr. Bossu, has lately been made a Chevalier of the Legion of Honour :—

"Subsequent to a discussion I lately had on hippophagy with some Americans and English, it was decided that a dinner of horse-flesh should take place at my house on Sunday, 23rd November. This is the *ménu potage*, of horse-flesh : *Bouilli* of horse, sausage of horse, *cheval à la mode*, stewed horse-tongue, potatoes fried in horse fat, roast horse, *salade à l'huile de cheval*, potato fritters *à la graisse de cheval*. No fish and no poultry.

"Among the guests were several English and American ladies, who, being quite edified now by their own experience, intend to contribute, as my friends, Dr. Bowditch, of Boston, and Mr. S. A. Bicknell, of London, have already done, towards the propagation in their own country of a healthy, economical, and very nourishing article of food. I am very anxious that their example should be followed by their fellow-countrymen. Is it not sad to waste such large quantities of food, when so many poor and so many labourers are deprived of the necessaries of life. We appeal to the generous feelings of the English and United States Press to overcome the prejudice that exists against this new food."

CASES OF TRANSFUSION OF BLOOD.

Dr. L. Frigirio (*Ippocratico*) mentions the case of a woman, æt. 27, who entered a lunatic asylum with great leucocythemia, accompanied by puerperal mania. Professor Lambrose, after trying various remedies, tried transfusion as a last resource. Eighty grammes of defibrinated blood were injected through the internal saphena vein in three parts. The blood was taken from a perfectly healthy individual.

Shortly after the injection there were short shivering fits, lasting for about an hour and a half each ; when this was past the heat of the body and number of pulsations were increased ; the heat oscillated in the four succeeding days from 36° to 39°, and afterwards remained at the normal degree, as also did the pulse.

To assist the effect of the transfusion good diet and iron were administered. By such means a month afterwards the patient left her bed already much better, and in the course of a few days she asked to be allowed to do some little work.

As the health was restored the mind became restored to its pristine state, and she desired to go back to her native country.

In the second case, a patient had suffered for some years from leucæmia, during which time he had also been affected with ague, which had greatly reduced his strength. He was then attacked with typhoid fever, which caused him to enter the infirmary ; and this caused severe intestinal hæmorrhage on three occasions. The temperature of the body before the operation was 34° in the axilla, and the pulse in the radials gave 80 pulsations, scarcely perceptible.

About ninety grammes of defibrinated venous blood were injected into the median cephalic vein, as it was found impossible to insert the nozzle of the syringe into the superficial veins of the lower limbs, which were scarcely visible.

During the operation the pulse fell to 66, while the temperature remained at 34° ; an hour afterwards the patient was affected with intense shivering fits, to which there succeeded augmented temperature and rapid pulse (t. 37¾°, p. 88). In six hours' time slight delirium ensued, but the heat fell to 34°. Towards evening of the second day the delirium had ceased, and the face became animated, whilst the temperature rose to 38°. From this time the patient went on improving. The patient left the infirmary of Pesaro in forty days, looking well, and returned to his usual occupation, that of a gardener, whilst his leucæmia had also disappeared.

Celsius' thermometer was used, and to inject the blood a syringe of mean capacity was made use of, furnished with different canulæ, proportionate to the calibre of the vessels punctured.

CASE OF CÆSAREAN SECTION.

In November, 1872, Teresa Dona (*L. Oss. Gazz. dell' Cliniche*) offspring of ricketty parents, contracted marriage. She was not more than a metre in height, and exceedingly deformed. On the 2nd October commenced the first symptoms of labour. No presentation was discovered on examination, although the mouth of the uterus appeared well dilated, and the sac full of water could be felt. When the fluid escaped, the pelvic cavity was examined, and it was found that the antero-posterior diameter of the upper outlet did not reach two inches. The labour did not advance, and the Cæsarean section was determined upon, the patient consenting calmly to the decision of her medical attendants. In order to lessen the pain of a long, delicate, and dangerous operation, she took in two hours ten grammes of chloral.

The operation was commenced before the chloral had produced its full effect, but when the sensibility appeared dulled and the memory blunted, Dr. Merlini, on the right hand of the patient, held the uterus fixed with both hands above, and prevented the intestines from presenting, and Dr. Silvestri operated. The first section was made in the median line, and prolonged above the umbilicus. When all the tissues and the uterus had been incised with great care, the left arm was found presenting. Turning was made use of, and a child was withdrawn, healthy and vigorous. There was no hæmorrhage or vomiting. The uterus was cleared out of the placenta and some blood clots, the edges of the wound cleansed, and one of the uterine arteries tied with the elastic ligature. This being done, Dr. Grandesso-Sylvestri practised the elastic suture of the uterine walls, passing the needle quite through the thickness of the walls. Four simple punctures were made. Then the abdominal walls were united by sutures, four being used, ordinary simple sutures.

The patient fell fast asleep after the operation, on account of the hypnotic effect of the chloral. Next evening the thermometer in the axilla was 37°. No food was given, but only cold soup and lemonade. Again two and a half grammes of chloral were administered, and patient slept soundly all night.

On the morning of the 4th (the operation having taken place on the 2nd) the pain had disappeared, and the lochiæ commenced to flow in small quantity, when some pills composed of digitalis and ergot of rye were given. She went on well and without pyrexia, and on the eleventh day begged for more food, her appetite having become greatly augmented. On the thirteenth day all medicine was abandoned, and on the fourteenth the diet was more generous. On the sixteenth day of the operation the bandage was taken off, and the abdomen found to be of normal aspect, the lower part of the wound having healed by first intention. The points of suture were removed from the abdominal walls. On the twenty-fourth and twenty-fifth she was allowed to get up and sit on the bed. The writer of the history attributes the good result to the use of the elastic ligature, practised for the first time by its discoverer, Dr. Grandesso-Sylvestri, in the Cæsarean section. Up to this time the ordinary thread used in suture of the uterus was useless, when the organ became gradually smaller, and thus left the loop loose. But the elastic thread, following the uterine contraction, always keeps the edges of the wound in contact, and thus favours the union, and what is more, prevents the extravasation of materials and blood into the abdominal cavity.

The mother had no milk ; but the child flourished under the care of a healthy nurse.

DR. CORNIL ON CIRRHOSIS OF THE LIVER.

Dr. Cornil stated at the *Société de Biologie* on the 25th Nov., that in cirrhosis of the liver there may first of all be noticed a chronic inflammation of the serous membrane.

This peritonitis is characterised by a velvety and papillary state of the peritoneum, or even by a simple want of its polish. These vegetations may be from a quarter of a millemetre to a millemetre in length; they are terminated by prolongations sometimes forming loops. Under the microscope we recognise that they are formed by lamellæ of connective tissue covered with flat cells. The epithelium covering the papillæ is like that of the peritoneum, and differs from it only in a certain swelling of the cells. The papillæ are implanted on Glisson's capsule, and their connective tissue is continuous with that of said membrane. They are traversed by vessels which communicate with the network of the vena portæ, so that the dilatations of vessels observed in cirrhosis are in relation with the blood-vessels of the peritoneal vegetations. Besides, the vegetations by their development establish adhesions between the liver and the adjacent organs.

In the preparations of cirrhosis made by Dr. Cornil, he has ascertained clearly the presence of vascular dilatations in the whole thickness of the liver to such an extent, that at first sight an observer might have taken the appearance for a vascular growth. The dilated vessels ended in a cavernous tissue hollowed out of the connective tissue. The cavities were full of blood, had thin walls, were slightly resistant, and formed of fibrillæ and embryonic tissue, covered by flat cells. Besides, the hepatic cells had not disappeared, but were flattened, lengthened, and perpendicular to the direction of the vessels.

We see, then, that according to these researches the biliary vessels and the blood-vessels do not present in cirrhosis the alterations which the theory of interstitial inflammation had built up. Has there not been described an atrophy and a crushing up of the hepatic cells, of the biliary canals and blood-vessels, by the invasion of the connective tissues? But Dr. Cornil has found some biliary network in the thickness of the connective lobules, blood-vessels, too, dilated into the trabecula, and opening into the spaces of the connective tissue.

BILIOUSNESS.

Some day we may arrive at definite ideas respecting the conditions included under this term. At present it is employed to mean almost any derangement of the chylopoetic process. In consequence of some experiments lately made in Germany, by injecting cholesterine into the circulation of animals, Prof. Austin Flint, jun., who had long previously worked at the subject, has re-stated his views before the New York Academy. He says the elements of secretion do not pre-exist in the blood, but those of excretion do, and they are separated, not manufactured by glands. He finds that cholesterine is always present in the blood, which gains 23 per cent. of this substance by passing through the brain, and loses as much by passing through the liver. He concludes, therefore, that it is excrementitious, formed in the nervous system, and removed by the liver. If this organ becomes disorganised it accumulates in the blood, and the term cholesteræmia is justifiable. Having been separated by the liver, the cholesterine in the bile passes into the intestines, and there changes into stercorine, of which some ten grains daily are discharged.

Dr. Barker alluded to the several sluggish conditions termed "biliousness," and which had also been called "cholæmia," though they have never been properly explained. But, if cholesterine be really the effete *débris* of nerve-tissue we can certainly understand the torpor, headache, and some other symptoms that appear to arise in over brain-work. Dr. Barker, too, has found convulsive cases sometimes depend not on uræmia, but perhaps on cholesteræmia, and he has been successful by diverting attention to the liver rather than the kidneys. Dr. Barker's name is a sufficient guarantee for his clinical facts, and it appears to us that the question of acting upon the liver is still one to be entertained, or at any rate, that imperfect function of that organ may give rise to disease.

SIR H. THOMPSON ON LITHOTRITY.

In an address on the "Future of Operative Surgery for Stone in the Bladder," delivered before the Midland Medical Society, Sir Henry Thompson prophecies the universal success and applicability of lithotrity in the adult. He said, if the stone be not larger than an ordinary nut, requiring only two or three crushings, a perfect result may be ensured, and that he had operated upon sixty-three such cases of a mean age of over sixty years, with no fatality.

Sir Henry's first deduction is—

"That the diagnosis of the presence of stone in the bladder and of its size is of the highest importance."

The second—

"That the operation of lithotomy must in future be rejected for all stones which are of moderate size."

The moral of the address being, as we understand it, that as our knowledge increases, all stones may be discovered while small, and, therefore, all may be certainly cured by lithotrity.

For the discovery of small stones, the lecturer advised that the patient should make water a few minutes before sounding, and says, that in the whole course of his experience, he has not met with more than two or three cases in which the obvious early signs of calculus were absent.

SERO-SANGUINEOUS CYSTS OF THE NECK TREATED BY ELECTRICITY.

Dr. Amussat (*Bull. Gen. de Ther.*, 1873) observes that there are met with in the anterior part of the neck, cysts developed in the thyroid body, in the glands, and often in the connective tissue. When these tumours are not very large they are only unsightly; but in enlarging the end by disturbing deglutition and respiration, force the patients to carry their head at one time to the side and at others forward, besides which they cause habitual congestion by compressing the vessels of the region.

The materials they contain are various, but most generally we find serosity only, or mixed with blood, or pure blood in them. The inconvenience they cause makes the patients sooner or later to seek for a cure, and surgeons treat them by incision, excision, extirpation, iodine injections, &c. Celsus has advised cauterisation, which gave Dr. Amussat a complete success in 1852. Consulted four years ago for a sero-sanguineous cyst of the neck, he cured it by employing galvano-cautery. A gentleman, æt. 69, was seen in October, 1869, with a tumour of the neck, fluctuating, indolent, without change of the colour of the skin, and extending from the angle of the lower jaw to the sternum; it had commenced to attract attention in 1858. He thought it was a sero-sanguineous cyst of the neck. A puncture made with a trocar gave issue to half-a-pint of liquid of chocolate colour.

On the 3rd December, the tumour having refilled, M. S., the patient, was seated in an arm-chair, his head well supported, and the tumour was punctured above the internal extremity of the clavicle with a long exploratory trocar, and directing this obliquely from upwards and backwards, the point was brought out behind the angle of the lower jaw; the puncturing part was then withdrawn, and a platinum wire introduced, whose extremities were at ten centimetres from the points of entrance and exit.

The contents of the cyst were then evacuated by the canula which was then withdrawn. Then, seizing the two extremities of the thread with two calipers connected with the rheophores of a surgical pole, he made it red hot, and thus cauterised the interior of the cyst, taking care to bend the thread laterally, in order to reach the different points internally. When the operation was ended he applied to the neck cataplasms, at first cold and then tepid. The patient was not one day in bed, but his wife told the surgeon that although he slept well, he had been of hot skin up till eight in the morning. In the end of April the patient was completely cured.

In 1860, Dr. Amussat saw a young lady, æt. 24, who had a tumour on the left side of the neck, which had resisted for some months the tincture of iodine and ointments. On examination, the cyst was found the size of a walnut, and upon the seat of the carotid, which was felt beating beneath. The lady was very good looking, and rejected any operation likely to leave a scàr that might be visible. Electropuncture was proposed and accepted. Every two days Dr. Amussat introduced into the cyst two fine needles of steel, which were put for ten minutes in connection with a small pile of Bunsen.

When the patient supported this operation well, he took a larger and more powerful one, and lastly, one of twenty-one centimetres high. Later, to hasten the disappearance of the tumour, he applied tincture of iodinė pure, between each electric sitting. In forty-five sittings she was cured of the tumour.

TREATMENT OF GRAVE'S DISEASE BY ELECTRICITY.

Recent writings of Dr. Meyer (*Berlin. Klin. Wochen.*, 1873) appears to authorise the hopes founded on the galvanic current considered as an important agent in the cure of this terrible disease. Meyer advises galvanisation of the sympathetic. According to this author, galvanic treatment must be long continued, and so that a slight galvanic ascending current may traverse the great sympathetic for two or three minutes each sitting. The proceeding consists in applying one pole to the submaxillary region, and the other above the affected eye. In the course of some sittings, the practitioner commences to observe the amelioration of the pathological processes as is confirmed by the four cases cited by the author in his notable memoir.

DR. DUPINS ON ABORTION IN QUEBEC.

In the *Canada Lancet*, Nov. 1, 1873, Dr. Dupins is quoted as speaking as follows: "We hardly dare to mention those shameful advertisements (which we blush to see in the columns of journals edited and published by French Canadians who call themselves Catholics) which plainly instruct women in the knowledge of preventing Nature from finishing her work; conduct which we should wish to be able to brand as it deserves. We could not exhibit the sorrowful spectacle which is presented to us by American society, where the number of women who conceal their faults by guilt, and of the *quacks* who make themselves accomplices in homicide (for happily for the honour of our profession, there as elsewhere, the true physicians who allow themselves to be guilty of the crime are rare) are so great that the original population of New England is daily decreasing; but all who have at heart, the health, the honour of our people, and public morality, know these facts, or ought to know them, and take means to prevent the extension among us of so grave a crime."

It is very singular that in the United States there should be such a dangerous and criminal practice as that of abortion in vogue. In France, where families are small and carefully cared for and educated among the citizen class, abortion is quite unknown, so that the French are wiser and more thoughtful than the Americans.

TREATMENT OF CATARRHAL JAUNDICE BY ELECTRICITY.

Dr. Gerhardt (*Berlin Klin. Woch.*, 1873) after many attempts, proposes definitively faradisation to combat catarrhal jaundice. By means of a careful percussion along the lower margin of the liver, he assures himself of the position of the gall bladder. In some cases he says, the point occupied by this organ may be seen and felt, since it causes a small prominence below the corresponding costal rib, which moves up and down during inspiration and expiration. In all cases between the limits which correspond to the lateral oscillations in position of the gall-bladder, we meet with a dull spot, obtuse, and semicircular, with the convexity downwards, or with a point at the edge of the liver more markedly dull. This point being ascertained, he applies over it an electrode of a strong induction current. The other electrode is applied upon the anterior wall of the abdomen in a point opposite to the first. Almost always when the current is powerful it produces immediately a gurgling heard by the ear. In many cases this effect cures, and the fœces become darker and the urine paler.

ELECTRICITY IN PARTURITION.

Dr. Ulisse Martemucci (*Lo Sperimentale*) says, that already in 1871 he had used electricity as an important assistant in cases of labour with uterine inertia, when ergot of rye had failed.

The method consisted in one case in applying the induced current, placing one electrode with a moist sponge on the right side of the abdomen at the level of the umbilicus, and the other also with a moist sponge on the left, running over the abdominal muscles, first with the one and then with the other. In fifteen minutes the fœtus was expelled dead without the use of forceps which are always dangerous. In the *Gazzetta di Torino*, 1873, he reports two other similar cases, in both of which the children were born in the best condition of health. Also in eight other cases he succeeded without the use of ergot. He observes that the labour takes place much more rapidly thus than when ergot is used, and that in these eight cases he never lost one fœtus, whilst with ergot he lost one in four. Hence he derives the following corollaries:—1. By using electricity the obstetrician has in hand a method of causing the cessation of uterine concontractions whenever he chooses; whilst, when ergot is used the action is constantly kept up. 2. When ergot is used it is necessary that the labour should be speedily finished, on account of the fœticidal properties of the drug, because the fœtus and placenta are so comprised as to make circulation difficult. 3. By the electric current also, the obstetrician can leave off by turns and again recommence the uterine contraction, which he cannot do in cases where ergot is used.

CHLORATE OF POTASS IN CANCER.

We have, on a former occasion, reported the use of chlorate of potass in carcinoma uteri. We may now add that Dr. Burow, sen., has tried it in five cases of open cancer; one, twenty-two centimetres in circumference, was situated on the upper arm, three on the mamma, one originating from the periosteum of the upper maxilla and zygoma. All, except two, had terminated in ulceration without previous operations. The chlorate was applied once daily, finely pulverised, over the entire surface of the ulcer. It produced diminution and shrinking of the exuberant granulations, resorption of the surrounding infiltrations, lessening of the secretions and of the irritability. He does not consider the value of the remedy established beyond a doubt by his yet limited observations, but calls the attention of the profession to his success, in order to insure further investigation.

Dr. Dörger, of Hamburg, recalls that French physicians used the chlorate ten years ago with the same effect, and it may be mentioned that the *Union Méd.*, in 1863, reported favourable results by Bergeron, Milon, and Blondeau, who used very strong or concentrated solutions of this salt locally. Débont (*Bull. de Thér.*, lxvi., p. 12, Jan. 25, 1864; *Schmidt's Jahrbücher*, 1865, vol. i., p. 170), Lebbane, Cook, Charcot, Delpech, and Wishon have also previously reported successful cases.

IN the *Detroit Review of Medicine* Southworth points out the injurious influences of iron stove-heated rooms on children, the air being unduly charged with carbon-oxide and dioxide along with the effete matters of respiration. The lungs especially are found to suffer.

THE ravages of tubercle are confined to no single portion of the living frame. Nevertheless, uncommon as they are in the tongue, two instances of lingual tuberculous ulceration, by a singular fatality, were recently brought into the Hôpital Cochin on one and the same day. The cases were detailed in full by M. Bucquoy before the Société Médicale des Hôpitaux. To cite his own description, taken from the *France Médicale*—"Both had, on the right border af the tongue, a deep ulcer, 4 to 5 centimetres in length, and their characters exactly corresponded well with those of M. Féréol's interesting case. Doubtless," said M. Bucquoy, "they are remarkable examples of tuberculous ulceration of the tongue."

OF all places there is a very excellent disquisition on the endurance of building materials in the *Independencia Médica*, of Barcelona. It is saddening to reflect on the multitudinous lives which are lost by having recourse to improper materials. In every case, says the writer, the carbonates of lime were simply converted, by intense heat, into quicklime, so that from this cause alone buildings subjected to intense heat are destroyed.

THE mortality this year, owing to yellow fever in Shreveport and Memphis has proved excessive. It seems so strange that an intelligent community, such as are the people of the United States, take no decided steps to obviate the incursions of destructive malarious disease. In Rush's time the cases of yellow fever were removed, at least, towards the end of the epidemic, from Philadelphia, with much advantage. The indication to leave infected localities is indeed pressing. It is pleasant to know that of sixty-three medical men sent to succour the distressed, not one, so far as we have heard, incurred the disease.

THE difficulty of getting rid of enuresis in young people is sometimes very great. In regard to remedial measures, Dr. Brugelman, led by an article in the *Berlin Klin. Wochenschrift*, resorted to syrup of the iodide of iron, frequently through the day, with every success.

To allay the nervous derangement and induce sleep in delirium tremens is often next to insuperable. Frightfully large doses of opium, with any amount of stimulation, prove occasionally quite fruitless. In the case of a Scotsman, hurrying on to death, Dr. Chenery, of Boston, found the tincture of digitalis, along with chloral, given and repeated, of the greatest efficacy. Mustard in addition was applied to the pit of the stomach, while eggs beaten up with milk were taken internally. Solid food was cautiously resorted to, and the patient made a firm recovery.—*Boston Med. and Surg. Journ.*

THE *Philadelphia Medical Times* records a most excellent lecture by Dr. Goodell on the "Production of Female Disease by Inadequate Closet Accommodation." The results on which he feelingly dilates are really deserving of the most serious consideration. He states that the majority of American women labour under constipation of the bowels with various forms of indisposition. Dr. Goodell commends earth closets in the strongest terms, and shows how needful they are to the welfare of the community.

EVERY branch of medicine is, or ought to be, of moment to us, and the same physician points out the desirability of expelling the placenta after childbirth by carefully graduated supra-pubic pressure.

The culture of cinchona plants, particularly the Cinchona officinalis bonplandia, and calisaya, has reached a great height in India and in Java, and by the rich store of quinine which is likely to accrue, promises to be highly serviceable. The *Pharmaceutical Journal* yields a very excellent summary of the lengths to which this culture in the great Indian peninsula, as well as in Java, has gone.

The *Presse Médicale Belge* enlarges very forcibly on the needfulness of a more widely diffused culture, not only in the medical, but the collateral sciences. The writer warmly asks why psychiatric science is, in Belgium in particular, so entirely neglected, and adds that every day shows the necessity of studying the subject. Nothing, indeed, can well be more important or desirable.

M. Bouchut insists strongly on the desirability of early incising diphtheritic and scarlatinous buboes in the neck, with a view to avoid after dangerous and indeed fatal complications.—*Bulletin de Thérapeutique.*

TOPICS OF THE TIME.

INTRA-RECTO-ABDOMINAL EXPLORATION.

SUCH is the name applied at the New York Academy of Medicine to the exploration of the abdomen, by introducing the hand into the rectum, practised by Simon, of Heidelberg, and reported in the DOCTOR last year. The method seems likely to extend, for we find from the discussion that took place at the Academy, and reported in the *New York Medical Record*, that it has obtained considerable support. Curiously enough, it would seem that it is not new, for Professor Dennig, at the Academy, stated that he had performed the operation in 1842, on a man 48 years old, without ill-effects. Dr. Charles A. Leale, in a paper which started the discussion, resorted to the operation, not in search of a stricture, but with the intention of irritating the solar plexus, and thereby preventing death from asthenia. The patient had attempted suicide by chloroform, so that the parts were completely relaxed. Dr. Leale had seen benefit result from electrifying the solar plexus, and as this patient was dying, he resolved to apply mechanicial irritation.

He therefore passed his hand, well oiled, through the sphincter; after a pause he went on to the sigmoid flexure, when it was turned partially so as to let the back of the hand look towards the concavity of the flexure. After another pause, he carried the hand gently along the colon, to a point four inches above the umbilicus. This was sixteen inches from the anus as measured on the arm. The dilatation of the anus had been ten inches. In withdrawal, Dr. Leale was able to recognise the pelvic organs.

As soon as the root of the diaphragmatic plexus was irritated, respiration became more vigorous, and soon after consciousness returned.

Dr. Howard regarded the operation and also electrifying the plexus as hazardous, and thought neither should be employed till all other means had failed. He pointed out that slapping the epigastric region might be equally efficient and not dangerous. For exploratory purposes it may be justifiable, but is not without inconvenience, and Dr. Feaslee would chiefly confine it to the pelvic organs, as when the hand went further, the danger was greater. The control of the fæces returns, if lost, after a few days.

In stricture of the bowel there is more danger of laceration, as ulceration usually exists just above, and we think it right to mention that death has been brought about by such laceration.

To us it seems that the method will be employed in exceptional cases to explore the bowel and pelvis, but although Dr. Leale's case was successful, we doubt very much whether the plan will be adopted for the purpose of irritating the solar plexus, which could be quite as effectually stimulated by electricity. This, if as serious as represented, would not bring about injurious after-effects.

VALVULAR DISEASES OF THE HEART.

Dr. Balthazar Foster has related (*B. Med. J.*, December 20), an interesting case of rupture of the aortic valves by an accident. The history was very precise, and the case carefully watched. The injury as found on post-mortem was extensive, and owing to its position, the coronary circulation was robbed by the regurgitant current, so that the cardiac nutrition could not keep up the hypertrophy necessary to compensate for the defect of the valve. The progress of the case was therefore very rapid.

Professor William Pepper, M.D., in a clinical lecture at the University of Pennsylvania, published in the *Medical and Surgical Reporter*, thinks there is no direct proof of a sudden rupture of a healthy valve from strain, but that in most cases where it appears to have occurred, "there was some previous though latent tissue change." Perhaps Dr. Pepper would here only include self-exertion. In Dr. Foster's case, the man to that time healthy, and shortly before, medically examined, was by a lurch of the ship in heavy weather, just as he was coming on deck, thrown violently forwards. He partially saved himself by clutching the hatchway, but was struck on the left side, and from that time was ill.

Dr. Pepper considers digitalis the most reliable drug to stimulate the heart to more efficient contractions, and inculcates its use in aortic regurgitation or obstruction. He thinks there is not much risk of accumulative effects if properly watched. As soon as the heart, instead of beating violently and inefficiently, settles down into quieter healthy action, and the pulse becomes stronger and fuller, he decreases the doses, and gives them at longer intervals. As to sudden death, he says it occurs in this disease from failure of the contractions when digitalis is not given, while this drug will relieve the more alarming symptoms and give great comfort, even prolonging life for years.

In a paper on "Prognosis of Valvular Diseases of the Heart," in *Saint Thomas's Hospital Reports*, vol. ii., Dr. Peacock says, that incompetency of the valves is a more serious defect than obstruction, and of the affections of the valves of the left side of the heart, incompetency of the aortic is more dangerous than the similar condition of the mitral valves. Not only does incompetency of the aortic valves occasion great impediment to the circulation, and especially an imperfect supply of blood to the brain, but as the power of the left ventricle becomes rapidly exhausted, there is danger at any moment of death by syncope. In the corresponding condition of the mitral valves, though it seriously obstructs the pulmonic circulation and occasions great visceral congestion, death is brought about more slowly as the result of the imperfect aeration of the blood and its impure condition from the state of the parenchymatous viscera, and by dropsical effusions, as sudden death is less likely to occur. As regards obstructive disease of the two sets of valves, he would reverse the order in which they are regarded as serious, obstructive disease of the mitral being apparently a more important defect than the same affection of the aortic valves. In the former condition the combined power of the left auricle and right ventricle is unable adequately to propel the blood through the left auriculo-ventricular aperture, and hence the lungs and other organs soon become very greatly engorged; while in cases of aortic constriction the left ventricle long resists the impediment, and it is only when the obstruction has become extreme, and the power of the ventricle is impaired, that the more distant organs are involved.

CHOLERA.

The literature of cholera accumulates so fast that we are once more obliged to refer to it. This is perhaps, the less surprising, considering that Europe has lately been invaded, and that many are expecting that we shall ourselves be attacked in the coming summer or autumn.

Dr. Cunningham, Sanitary Commissioner with the Government in India, has issued a "Report on the Cholera Epidemic of 1872 in Northern India," in which he reiterates his conviction that the water theory is "irreconcileable" with the facts observed, and maintains that "it is the doctrine of contagion which has prevented progress." It is, however, to be noted that Dr. Cunningham means by contagion, the direct propagation of the disease from individual to individual; but this is not the sense in which the word is used by most European writers.

GERMAN LITERATURE ON CHOLERA.

Dr. Pettenkofer's views as to the causation of cholera have been lately called in question by Kuchenmeister (a) and others. Dr. Sanders observes that in India the cholera seasons of peculiar localities are known, and many spots are known to escape all epidemics of the disease. He leans to the theory which attributes the greatest importance to infection by means of the dejections. Kuchenmeister considers proximity to the clothes, foul linen, &c., of the sick to be a fruitful source of the disease. Pettenkofer has proved in many epidemics that the water supply was not the cause of the spread of cholera. He seems to think that only the soil is in fault; and contends that nowhere is the spread of cholera so unusual as on shipboard. Attacks of cholera on shipboard die out, and are restricted to persons who have probably been infected on shore.

(a) "Untersuchengen ueber die Cholera in ihren Beziehunger zu Boden und Grundwasser." Von Dr. Fr. Sander. Cologne, 1872.

"Handbuch der Lehre von der Verbreitung der Cholera." Von Dr. F. Kuchenmeister. Erlangen, 1872.

"Zeitschrift fur Biologie," Band viii., 1872.

The cholera germ, says Pettenkofer, is brought by human intercourse, and local influences of soil make it grow. He does not accurately describe the conditions of a soil required for the increase of the germ.

Pettenkofer then holds that there is a special cholera-germ, but this cannot of itself produce cholera, since the disease sometimes spreads, and at other times not. His opponents admit this, but urge that Pettenkofer has not proved that the soil is the unknown factor which nourishes the germ. It would certainly seem that Pettenkofer has too much neglected the introduction of cholera by drinking-water. The epidemic in Broad Street seemed to demonstrate this.

The view which looks on the cholera germ as being carried by men, and being introduced into the bodies of the susceptible through the instrumentality of food, water, &c., certainly seems more in accordance with the history of the many epidemics that have devestated Europe during this century.

ANATOMICAL ALTERATIONS IN CHOLERA.

Dr. Hayem communicated some investigations to the Medical Society of the Parisian Hospitals. In an individual in the algid state with an axillary temperature of 34° c. the blood was examined and was found to present viscous red globules, without any tendency to unite in columns, but grouped irregularly. There was increase of the white blood corpuscles, and presence of small red globules three times as small as the normal ones. In another patient, who was dying, but after a long period of reaction, the blood did not present any other abnormal symptom with exception of a slight augmentation of the white cells. It was not possible to find any trace of proto-organisms. The author does not consider those appearances as characteristic of cholera.

In the dejections many vibrios were remarked, belonging to not less than ten varieties; but the same kind of vibrios were not always found in the stools of all cholera patients, whence it cannot be maintained that there are any special to cholera. In three cases Dr. Hayem found organisms which resembled fragments of coarse striated muscular fibre, and which could not be referred to any variety of vibrio hitherto described. The proto-organisms most numerous and constant, which constituted nearly all of the whitish flakes characteristic of choleraic rice-stools, were formed of little rounded or ovoid vesicles, in groups of two or three together, and united in considerable masses. These are probably the same elements as in Germany are distinguished by the name of micrococci.

The author thinks that it is difficult to pronounce in favour of any special parasite; but says that the cholera-stools are formed by a liquid in an advanced state of putrefaction, even in the first stage of the disease, before the phenomena most characteristic of cholera appear.

Yet the alterations which the dejective tube present are, according to Dr. Hayem, characteristic. Its intensely red colour, the violet tint from venous hyperæmia, the constant distension of the intestines by a great quantity of gas and liquid, varying from two to three litres, which is found even in cases of cholera called "dry." When the bowel is cleared of its contents it presents the marks of generalised gastro-enteritis throughout the whole length of the tube, sometimes from the œsophagus and to the rectum, with its maximum in the last yard of the small intestine, and in the first part of the great intestine. The psorentery was less pronounced in this last epidemic than in the former.

Microscopic examination showed congestion, chiefly venous in character, in the rite mucosum and submucous tissue, sometimes extending to the lip of the follicles, epithelial desquamation often complete, and cylindrical epithelium mingled with the exudation, and infiltrated with fatty granules; persistent glandulus epithelium, but this very granular in character, sometimes vesicular; the tissue of the mucous membrane and the villi rich in lymphoid elements and recent conjunctival elements, and full of fatty granulations. These alterations are more or less developed according to the cases, but they do not differ from that proper to an intense catarrhal inflammation.

The results obtained by Kersch and Renant are for the most part similar to these (*Progrès Méd.*, N. 17 and 18). After referring to the investigations made in Germany on this point, the authors report their own observations, from which they think themselves able to conclude that the principal lesions met with in cholera are acute or chronic inflammations, and analogous to the lesions which are met with in typhoid fever, in tuberculosis of the intestines, or dysentery, and that they may be summed up as follows: Development of embryo-tissue in the mucous membrane, and substitution of this tissue in Lieberkuhn's follicles, congestion of the submucous tissue, swelling up of the cells, new formation of young cells at the expense of pre-existent elements, alteration of the internal membrane of the blood and lymphatic vessels, hyperplasia of the lymph-tissue, and central softening of fatty nature of the shut follicles.

On examining the blood there was found first of all a great augmentation of red globules, which attained its maximum in the algid period, where the exit of serum is at its height, and then diminish gradually in the period of reaction. The augmentation of the white corpuscles is, however, very great, and forty to fifty-six of these are seen in the field of the microscope, with a power of 450 diameters. In a woman, the blood of whom was observed on the 20th September, during the cold stage, the blood contained (according to the process of Malassez) 7,489,000 red blood globules, and 27,800 white in each cube millimetre. Next day, when the patient was a little better, the number of red corpuscles rose to 6,338,400, and that of white to 27,000; on the 22nd, with the same number of white corpuscles, there were only 5,560,000 red; on the 23rd, in full reaction, the number of red globules was 4,109,000 per cube millimetre, or nearly the normal.

The author believes that the augmentation of red corpuscles in the cold stage is due to the loss of serum; but that their gradual diminution during reaction is due to two different causal elements—firstly, to the restitution of the watery part of the blood, and next, to the destruction of a certain quantity of red globules, of which the precursors are found in the form of orochrome in the urine when it reappears. The red globules, besides the augmentation in their numbers, present a notable diminution in their volume; and the small globules gradually diminish as the disease declines, disappearing with complete convalescence, perhaps by decomposing and destruction. The augmented number of white disks is not due entirely to the stasis of the blood, since it is quite in proportion with that of the red disks; and this is perhaps the reason of the numerous lesions which the lymph corpuscles of the intestines undergo in cholera.

Trchudnoxky, of Petersburg, has investigated the anatomico-pathological alterations of the liver in cholera. In the hepatic parenchyma are recognised those alterations characteristic of infectious diseases, *i.e.*, enlargement of the cells, uncertainty of the cell-walls, and, lastly, destruction of the cells. In the connective substance of the liver is found a multiplication of cells. The intimate membrane of the arteries shows the longitudinal stripes much developed, with constriction of the diameter of the vessels. The capillaries were full of blood, the elements of the vena portæ full of thrombi, which are found in different periods of regression. The epithelium of the excretory tubes was swollen, and affected with granular degeneration, or fatty degeneration. Thus, all the tissues of the liver were altered; some of these alterations had an inflammatory character, and such were those of the liver cells, of the connective tissue, and of the excretory ducts; others were sequels of the circulatory disorders, and others of the hepatic vessels and blood vessels. All the ten livers examined after three to ten days of illness (one after eighteen) offered said alteration, although in different degrees of development. They resemble those which are met with in other blood poisonings.

DISINFECTANTS IN CHOLERA TIMES.

Dr. Dujardin (*Bull. delle Sci. Med.*, Oct., 1873) recommends to prevent the spread of cholera that the following mixture be poured into public and private closets—10 parts of carbolic acid and 100 of chloride of lime are dissolved in water. He is firmly persuaded that the ferrate of calcium is one of the most powerful disinfectants. When 200 grammes of chloride of lime and 20 of grey carbolic acid are dissolved in a pailful of water, the mixture has a pale sea-green colour, the odour is peculiar, and it arrests at once the odour of cloaca by arresting decomposition.

Högyes gives, in the *Centralblatt*, an account of his experiment with cholera-ejections, which an hour or an hour and a half after-passing, he employed on animals. They seem to act differently on various animals, but in all they excite inflammation in the alimentary canal. Breathing air saturated with particles of the dejections set up similar symptoms, but not when the dejections had been previously treated with carbolic acid. Particles from the discharges soon exhibit fungi, which grow rapidly, but not if the discharges have been treated with the acid. Freed from their form-elements, the discharges, says Högyes, may produce the same pathological effects as if not thus freed.

TREATMENT.

Dr. Burg has written a pamphlet, in which he says that workers in copper are remarkably exempt from the disease, and he seems to think copper salts prophylactic. Some other observers have made similar observations. It must have occurred to many that the sulphurous acid evolved in the reduction of the metal from the sulphuret, may equally claim to be the beneficial agent. This view has been at length stated by Surgeon-Major Charles R. G. Parker (*Lancet*, Dec. 13), who states further, that in the gunpowder manufactory at Madras the same immunity from the disease is enjoyed by the workmen, and is, he thinks, due to their breathing sulphurous acid, and suggests that if it will ward off, it may cure cholera.

Dr. Goldbaum, in the *Berlin Klin. Woch.*, expresses an opinion in favour of antiseptics, especially of carbolic acid, but on very different grounds. The most important part in Dr. Goldbaum's article is that which condemns all attempts to restrain the intestinal discharges by astringents and opiates—the hypodermic use of morphia being pronounced more pernicious than other modes of giving opium. He says the mere loss of fluid is a part of the cholera process, which is neither injurious nor beneficial. Such loss could only cause a transient thickening of the blood, as fluid would rapidly pass through the capillaries.

FEVER.

DR. BRAND in 1861, wrote (*Gazz. M. Ital. Pro. Ven.* Padua, December 13th), that "every typhoid fever treated regularly from the first day by cold water, will be exempt from complications and will get well." The same author at present sustains the same theories with the same firmness, and has brought forward a number of cases to prove his position. Thus in 1868, he had already mentioned 170 cases of typhoid fever, all treated by cold baths, and all cured. Dr. Glenard now relates how, being prisoner of war at Stettin, he had occasion in 1870-71 to follow Dr. Brand's cases in 93 persons affected with typhoid fever. The cypher of those cured was 89; 4 died, but there was no exception to the aphorism above cited, since they were taken in for treatment from 20 to 30 days after the fever had commenced. Dr. Glenard also speaks of two cases cured by Dr. Soulier, and of 13 other cases which he himself had under treatment, of which cases 12 were cured, 1 died, and also for this one, the treatment was only commenced on the 24th day of the disease. In the face of such results, we might ask why, although they are adopted to a certain extent in the practice of other physicians, the mortality from typhoid fever is still so great? To this Dr. Brand would probably reply by examining the cases reported.

He succeeded in showing, that in 1411 cases when the mortality was 4·7 per cent., this was attributable partly to delay in the application of the method beyond the first week of the fever, and partly to the method itself, not being practised with all the rules laid down by Dr. Brand.

Dr. Glenard relates the particulars of a case he witnessed, as follows: Our patient was carried to the bath, whilst the rectal temperature was 40·9, and his shirt removed at the moment of immersion. The observer for the first time felt his heart sink at the application of this treatment, and asked himself whether the patient could not be treated without the cold bath, or might not faint in it; but such a physician should always remember Brand's aphorism, which is worthy of being written in letters of gold at the entrance of the bath room.

The patient is immersed up to the neck in the bath, and the head is also bathed occasionally with water, which ought to be of the temperature of from 6° to 8°, which is of great importance if cerebral symptoms are present. On the following day, when the nervous system is calmer, the temperature of the bath suffices. The affusion over the head lasts for two or three minutes. The patient is left in the bath for some time, and in 8 or 10 minutes he commences to chatter with the teeth and endeavours to get out of the bath, but he is kept in the bath 15 minutes. After leaving the bath affusions over the head are continued, The patient is blue, and trembles with the cold. He is put to bed without being dried, and the shirt is put on, and a blanket put over the feet, and a light blanket is put over the body in winter. Then some light soup is given tepid, with a few teaspoonfuls of old wine. The shivering fits may last 15 minutes to an hour.

The temperature of the bath rises two degrees, and that of the rectum falls 1°1', and the pulse is sensibly less dicrotous. The temperature of the rectum is taken every three hours, and he is put in the bath of 20° for fifteen minutes by day and by night, until the thermometer kept in the rectum for 5 minutes does not rise above 38°5'. The food given after the bath, that is every three hours, is liquid, always tepid, and may be changed a little. Milk, coffee, or tea with milk, rice, or vermicelli soup may be given, whilst, when the patient complains of great thirst, iced water may be given in small quantities.

On the following day, the patient has already taken 8 baths. The first impression that the physician experiences is one of marvel, at seeing the chest symptoms disappear, which presented all the appearances of a violent pneumonia. The consciousness is perfect; the patient is interested in what is going on, smiles and appears convinced of the barbarity with which he is treated. I have seen, adds Dr. Glenard, some patients who before knowing that after the first bath they were to take others every three hours, called for the cold bath, having a presentiment, says Dr. Brand, of the need of their organism struggling for existence. Generally, the three first baths are well tolerated by the patients who appreciate the advantage of them; after this they do not think them necessary, and the physician ought to use all his logic to convince them that the need persists, and to convince the family of this truth.

The abdomen remains meteorized with the same gurgling; the diarrhœa persists; an involuntary stool took place in almost every bath, and cold compresses were prescribed on the lower part of the abdomen. In spite of this, meteorism and diarrhœa are most obstinate.

On the third day the patient has already taken 24 baths, and we find the skin fresh, no headache, with the pulse steadier; tongue normal; abdomen without any gurgling; appetite good; the spleen is still enlarged; the chest is freer; the respiration is calm; the patient lies on the side, sleeps quietly; the urine which was scanty, or of a dusky hue and albuminous, is clearer, more copious, and without albumen. The patient has strength enough to walk to the bath supported by the nurse. The cold compresses are removed.

It is at this time that the physician requires all his authority to control the appetite, which is insatiable or voracious. This takes place on the third or fourth day, and as appetite is for the patient his criterion of health, he desires greatly to satisfy it. At the same time, the thermometer indicates that the patient is still ill, that the baths alone keep down the symptoms, and that the demon of typhoid is still present. Suppress the baths, and you soon see reappear the febrile phenomena. It was formerly noticed by Brand, that a little meat, for instance the quarter of a chicken, would suffice to cause a true meat fever; hence it is well to omit all meat until the patient has been for twelve hours without fever.

In this way, the duration of the disease is from 18 to 20 days, whilst the convalescence is about 12 days at most, and the number of baths varies from 50 to 180 and even 200. Brand allows no contraindication of his method, neither age nor sex, pregnancy nor menstruation, nor intestinal hæmorrhage, nor profuse sweats. There is but one typhoid (abdominal or petechal, simple or degenerated), and this typhoid has, as its remedy, cold water.

Dr. Glenard insists on the importance of hospital patients being thus treated, since they are not allowed to choose their medical adviser, as persons are out-of-doors.

A very interesting lecture on fever, by Dr. Wilks, is reported in the *Guy's Hospital Gazette*:—

Dr. Wilks said there was no reason why any one class of disease should be selected for the designation "fever," since fever or feverishness accompanied every local inflammation, and nearly every specific or zymotic disease. The word was probably adopted in ignorance. At the present time therefore, we should endeavour to expunge the word, especially as the disease best known by that name—"typhoid"—was wanting in many of the characteristics supposed more especially to attach to fever. Instead of "typhoid fever" we might use the term "enterica."

As regards fever *per se*, or feverishness, it belonged essentially to local inflammations and specific diseases. When you were called to a patient who had been a few days in a feverish state, the probability was that he had one of these conditions, and if after examining his body no local inflammation could be found, then a specific disease must be thought of, and its nature determined if possible by the history of the case and the presence of characteristic symptoms, such as rashes, &c. If none of these be present the disease was usually termed typhoid. Tuberculosis should be added to the category of local inflammations, since it was accompanied by feverishness or pyrexia; and pyæmia or septicæmia, should be added to the second category of specific blood diseases.

Increase of heat was the most important or constant element in pyrexia; but it was not absolutely a sign of fever, since it might occur in certain lesions of the nervous system, and on the other hand, in the course of a local inflammation, while the other symptoms of pyrexia remain, the temperature becomes reduced to the normal.

Does fever imply so an excess of those processes which are constantly going forward in health? The question included the generally received opinion. You have to think of the causes operating to produce animal heat, and then of those acting in excess and you have fever. This conclusion, however, although there are good reasons for it, is not entirely free from objection, for if a person takes violent exercise, his temperature raised, respiration hurried, &c., and in popular language, is "all in a fever," yet the tongue is not furred, nor is there anorexia, as in true fever. These latter symptoms would perhaps be induced if the temperature kept high for any length of time, but there is no proof as to this. Some have thought that fever might be due to a diminished loss from the skin rather than to increased production; but the result of experimental inquiry shows that more heat is given off in fever, with a corresponding tissue change throughout the body. Dr. Wilks also alluded to Dr. Maclaghan's theory, that there is a chemical change in the fever state, but that this was due in the case of specific diseases to the "poison germs" or contagion acting, not on the made tissue of the body, but on the circulating albumen derived from the food; so that there was an increased combustion while the body was starved of its nutriment.

Professor Haughton has calculated, that if you look at a man in bed with typhus fever, you have the counterpart of a traveller who has been performing a 50 mile journey in 24 hours, as regards the amount of heat produced and tissue change which has taken place in both of them in that time. A calculation might also be made as follows:—Say a man, weighing 150 lbs., has walked up Mont Blanc, a height of 15,000 feet, which is the same thing as that weight carried up. Now the mechanical equivalent of heat is 772 foot pounds. If you divide 15,000 by 772 the quotient is 20, so that the force required to take a man up Mont Blanc would raise his temperature 20° (Fahr.). If therefore we had a patient whose temperature rose in a short time 10°, the same amount of force would have been expended as if he had walked half way up Mont Blanc. The amount of chemical change due to combustion could be reckoned from this, and hence the amount of fuel required for the process. In this way calculations of the greatest interest could be made.

THE USES OF ERGOT.

A NUMBER of papers have lately appeared on the use of ergot, which is now being largely employed in medical practice. We propose here to report the conclusions arrived at by some of the writers.

Dr. Daniel Kitchen, whose investigations on conium we reported last year, has studied the action of ergot in nervous diseases (*Am. Jour. of Insanity*). He finds speedy relief from various forms of headache is afforded by a dose of ergot, and particularises:—

1. Headache depending on plethora or fulness of blood. 2. Headache from anæmia. 3. Headaches depending on changes in brain-substance and the membranes. 4. Epileptic headaches. 5. Migraine. 6. Headache depending on disordered menstruation. He reports ten cases of epilepsy and insanity in which marked and beneficial effect was noticed following the use of fluid extract of ergot and ergotine, either alone or in combination with sulphate of quinine and other remedies.

Ergotine may act in two ways: first, directly on muscular fibre, in the same way as any other stimulant; second, through the nervous system, principally the ganglionic. The immediate effect of ergotine on the blood-vessels is marked and rapid; the pulse is increased in force and volume; the slow and wavering pulse becomes full and strong. The power of ergotine is manifest, from its value as a hæmostatic in reducing the size of blood-vessels.

About 100 patients with plethoric headache took ergot, and in nearly all the attack was cut short in half an hour. In this form the pain is mostly at the back of the head, and there is throbbing of the temporal arteries. There were few cases of cerebral anæmia, but they too found relief. In them, Dr. Kitchen thinks the cerebral vessels are lax. Ergot, he says, contracts vessels, thereby giving tone to the arterial system. This would send the blood more quickly through the brain, but it hardly explains how the drug should be equally useful in plethoric and anæmic headaches. Still Dr. Kitchen says it is, and gives us the following conclusions, as the result of his experiments with ergot and other drugs:—

"1. Benefit of combination with bromide of potassium in epilepsy. 2. It is apt to produce cramps and pain in the stomach, which is remedied by combination with conium. 3. In nervous diseases it soothes all renal irritation and catarrh of the bladder. 4. It dilates the pupil sufficiently to be noticed. 5. Increases both frequency and tension of the pulse. 6. Has no appreciable effect on the heat of the body. 7. In large doses it produces the same effect as conium, by inducing sleep. 8. Its beneficial action in delirium tremens, after bromide of potassium has failed. 9. It combines readily in the form of a pill with sulphate of quinine. 10. It is a cerebral sedative. 11. Ergotine possesses an advantage over the alcoholic extract in not producing any pain or cramps in the stomach, and is given in smaller quantity. 12. Ergot is not likely to be adulterated, and we always secure an appreciable effect after its administration.

Dr. Hubert remarks (*Mouvement Méd.*, November 22nd), that ergot provokes and augments uterine contractions: how is it that it can relieve amenorrhœa? It is because it acts on the unstriped muscular fibres of the ovaries as well as of the uterus. In the case of uterine hæmorrhage ergot suppresses the bleeding by bringing about contraction of the vessels of the uterine mucous membrane, and also of the muscular fibres of the ovaries. In amenorrhœa this same agent, whilst bringing on the contraction of the muscular fibres of the ovaries, favours the detuscence of the Graafian vesicle and the fall of the ovule.

In puerperal hæmorrhages, whether in the metrorrhagia of the first five months of pregnancy, or those which appear in the last three months, and during labour, or immediately after delivery, ergot is prescribed with advantage. It is the same with non-puerperal metrorrhagia.

In chronic metritis ergot has also been employed as a solvent, but this should only be, says Dr. Gallard, in the early stage, and when especially there is no concomitant inflammation of the mucous membrane.

As to varieties of hæmorrhage, epistaxis, hæmoptysis, hæmatemesis, these are not comparable with those from the uterine cavity.

The ergot is administered in powder in doses of five to ten grains, from four to eight times in twenty-four hours, in infusion or decoction, in the dose of four grammes in 500 grammes of boiling water (one drachm in sixteen ounces), or the aqueous extract of Boujeau is used.

On this subject, the chemist of Chamberg observes that there are two principal constituents in ergot, the first ergotine, and the second a poison.

M. Tripier follows the example of M. de Saint-Germain in cases of Faradisation, instead of giving ergot to promote uterine contraction, but he only uses it five or ten minutes at a time (*Journ. de Méd. et de Chir.*) instead of twenty minutes, as proposed by M. de Saint-Germain. M. Tripier passes the current from the sacrum to the pubic region. The delivery is hastened, the placenta speedily expelled, and no ill consequence results to mother or child.

Drasche attributed distention of the bladder after the use of ergot to its causing retention of the normal quantity of fluid secreted. Wernich, however, believes (*Centralblatt*), that the drug increases the urinary secretion. It is obviously desirable to bear in mind the possibility of this in obstetric cases. Whichever explanation be correct, it may be desirable to direct attention to the bladder whenever ergot is given. It is stated by Wernich, that in one case where ergot had not any effect on the progress of the head, although it produced strong pains, the bladder was distended, and as soon as it was emptied, advance took place.

ABOUT BOOKS.

The Climate of Arcachon: a Treatise on its Influence on Certain Diseases of the Chest. With Notes on the South of France as a Winter Resort. By Dr. G. HAMEAU. Translated from the French by the Rev. S. RADCLIFFE, A.B., and revised by a Graduate in Medicine and Senior Moderator of Trinity College, Dublin. London: K. S. King & Co., 1874.

DR. HAMEAU has resided for several years at Arcachon, and the present work includes a series of valuable meteorological observations made by him, and papers read at the Medical Congress at Bordeaux, at the Medical Society of that city, and at the Société Scientifique of Arcachon. We have rarely seen a better translation, and there are some very useful notes appended by the translator. The book is, therefore, both pleasant and instructive. Dr. Hameau contrasts the winter climate with that of various towns in Provence and other parts frequented by invalids, &c. We agree with him as to the great difference between them. His first and most important distinction is that Arcachon is sedative to the nervous system, while Provence is well known to be stimulant. Although he is enthusiastic in favour of Arcachon for phthisical, asthmatic, and bronchitic subjects of a nervous temperament, he distinctly admits that its climate is unfavourable in every disease of the chest in persons of a torpid and lymphatic disposition. This is decidedly our own view, and we should be glad to see the distinction always made by those who recommend change of climate to their patients. Dr. Hameau relates several cases of cure of phthisis, and others in which considerable improvement took place during a residence at Arcachon, but he also adds cases in which death took place, some after amelioration, and some in which he found no improvement.

We must remark that Dr. Hameau represents the severity of the winter at Arcachon in the mildest terms. Even his translator feels called upon to add a note, p. 140, to say that four out of the seven winters he spent there were of very exceptional severity, and that in only two of them snow did not lie on the ground. As early as December, in the year 1871, snow lay on the ground for a week, and the thermometer one night fell to 18° F. In several other cases it fell to 16° F. It is true that in the south of France snow falls in the winter, but the temperature is decidedly higher, and the climate very much dryer. We are of opinion that Arcachon ought not to be regarded as a rival of Provence. The climates are essentially different. At Nice, where there is plenty of sunshine, with constant breezes, and not unfrequently injurious winds, like the mistral, the climate is so stimulating that it frequently provokes hæmoptysis in irritable subjects, though in torpid and relaxed constitutions it gives new life. On the other hand Arcachon resembles Rome and its near neighbour, Pau. It is comparatively cloudy, rainy, and sedative, and, therefore, suitable only, as explained by our author, for nervous and irritable patients. The immense pine forest by which it is surrounded is believed to add to its sedative influence, and many patients reside in the forest itself, in order to inhale as much as possible the resinous exhalations. Bournemouth possesses a similar advantage. We feel inclined to take exception to Dr. Hameau's denunciation of flannel. We do not believe that, if changed as often as cleanliness requires, flannel produces the evils he speaks of upon the skin, or causes the perspiration to be re-absorbed. We certainly recommend all delicate patients to wear flannel in all climates, and especially in such as Arcachon, Pau, Nice, Cannes, or other winter resorts, where, in spite of their general beneficial effects, there is nothing to be said in favour of the winds and the sudden changes of temperature, against which it is so important to guard. We think that Dr. Hameau has looked at other records with a rather prejudiced eye, but we thank him for the facts he has accumulated respecting Arcachon, and commend his work to all who are desirous of forming an estimate of its climate.

The Anatomy of the Lymphatic System. By E. KLEIN, M.D., Assistant Professor at the Brown Institution. Part I. The Serous Membranes. London: Smith, Elder, & Co. 1873.

WE received with unusual pleasure this splendidly-illustrated book, as it came to hand at a time we were engaged in histological work, and it gives the results of researches undertaken for the Medical Department of the Privy Council. They are now published with the sanction of the medical officer of the department. Since Recklinghausen showed the peculiarities of the serous membranes, and suggested that they formed great lymphatic sacs, no more important work has appeared on this branch of histology than the one before us, and this forms but a portion of a large work which we hope Dr. Klein may be able to complete. He demonstrates that on the free surface of serous membranes may be found what he terms "germinating epithelium," where cells just like lymph corpuscles are detached, and that these find their way into the lymphatic system through "stomata," bounded by peculiar cells. He traces the elements in the same manner that Recklinghausen did, through several stages of development, and adds considerably to our knowledge of the lymphatic system.

Many observers have probably been misled as to figures seen on stained preparations and called "stomata" marks that did not correspond with holes. Dr. Klein finds two such marks, the true and false "stomata." The true are bordered by endothelial elements of a germinating character. Then the knots and cords hitherto regarded as pre-existing adenoid tissue, or as collections of lymph-corpuscles, are found by Dr. Klein to be developed out of ordinary branched cells of the tissue—in fact, as "perilymphangeal knots and cords," and more, that the corpuscles at the spot are more numerous the further the development is advanced.

Other facts of equal importance are advanced, especially in the second part, which is devoted to the pathological conditions of the serous membranes. The normal and abnormal states are both illustrated with numerous drawings by the author, and the work altogether is a solid contribution to our knowledge of the subject, which every one interested in histology ought at once to make his study.

An Easy Introduction to Chemistry. Edited by the Rev. ARTHUR RIGG, M.A., late Principal of the College, Chester. With numerous Illustrations. Rivingtons: London, Oxford, and Cambridge, 1873.

THIS well got-up little volume is the first of a series of Science Class Books, issued by Messrs. Rivington, with the special purpose of promoting the study of science in schools, under the able editorship of the late Principal of Chester College. From a perusal of some of the chapters it appears to us admirably adapted for the purpose, and we cordially wish that future volumes may be worthy of the first. The book is based on Dr. Worthington Hooker's volume, and of course is only introductory. Its style is clear, and the illustrations greatly assist in the comprehension of the facts. The first chapter, entitled "the Chemist," is likely to awaken the interest of the beginner, and as much may be said for those chapters which treat of the more common elements and compounds. Mr. Rigg possesses the power of imparting important facts in a very pleasant manner, and he runs over the substances of which the world is composed, and teaches their qualities in a way that seems likely to prove attractive to young persons, so that those who begin the book are likely to read it through, and will then scarcely fail to have a general idea of the scope of chemistry. Even intending medical students would find it a capital preparation for systematic lectures, or for more advanced text-books. For the special purpose for which it is intended—viz., for use in schools, we know of no better book.

A Handbook of the Practice and Theory of Medicine. By FREDERICK T. ROBERTS, M.D. London: K. Lewis.

HAVING given brief summary of the work before us in our last number, we shall now merely conclude our review by mentioning some subjects omitted in our previous article. With regard to diseases of the circulatory organs, we have noted, although not by name, in ascending and descending respiration, "a peculiar form of breathing," described by Cheyne in fatty disease of the heart. It is not, however, peculiar to that condition, as pointed out by Dr. Little in the *Dublin Quarterly Journal of Medicine* some two years ago. The sphygmograph is described, and also a description of sphygmographic tracing. At page 731 we have a very good table of difference between Tænia solium, Tænia mediocanellata and Bothriocephalus latus, as also betweeen Lumbrici, Ascarides, and Tricocephalus dispar.

The section on diseases of liver is concise and readable With regard to acute yellow atrophy of the liver we do not see it mentioned that poisoning by phosphorous gives rise to similar appearances. Our author does not state, when treating of diabetes, that the temperature is often lower than normal in this disease, which is accompanied by wasting as great as in fever or phthisis. He also omits the new lactic acid treatment, which, by the way, may be carried out in an agreeable manner by ordering koumiss, which quenches the thirst. The work ends with a brief summary on diseases of the skin, written by Mr. John Tweedy. In conclusion, we are greatly pleased with Dr. Roberts' work, and cordially recommend it to the notice of our readers.

AT THE SOCIETIES.

Pacatior philosophoru oratio, oratorum pugnacior—CIC.

AT THE ROYAL MEDICAL AND CHIRURGICAL SOCIETY,

ON TUESDAY, NOVEMBER 25TH, 1873.

Dr. S. GEE related a case of calculous disease of the kidney, in a man who had suffered from gout. In the pelvis of the right kidney there were found—(1) a great stone, weighing 36¼ oz.; (2) eight smaller stones, each larger than a cherry-stone, weighing from 19 grs. to 50 grs.; (3) about a thousand flattened stones, like melon-seeds in shape; (4) a large quantity of gravel. In the pelvis of the left kidney was found a stone weighing 9¾ oz. The chemical composition of the greater part of the large stones, and of the smaller stones and the grit, was phosphate of magnesia and ammonia, nearly pure. The large stone had a nucleus of oxalate of lime, phosphate of magnesia, carbonate of lime, and uric acid.

Dr. SNOW BECK related a

CASE OF FATTY DEGENERATION OF THE CONTRACTILE TISSUE OF THE UTERUS, WITH SOME REMARKS ON THE NATURE OF THE CAULIFLOWER EXCRESCENCE OF THE OS UTERI.

AT THE MEDICAL SOCIETY OF LONDON,

ON NOV. 17TH, 1873,

MR. THOMAS BRYANT related a case of

INTESTINAL OBSTRUCTION,

in which he had made an exploratory abdominal operation, ligatured and divided a constricted band.

The PRESIDENT agreed with Mr. Bryant in thinking that more lives would be saved if the operation of gastrotomy was frequently performed, and earlier.

Dr. CRISP mentioned the case of a girl who for four days, in addition to the usual symptoms, had suffered severely with stercoraceous vomiting. Gastrotomy was performed and a large quantity of whey-like fluid with many flakes floating in it was removed; the intestines were examined, but no constricting band was found.

Mr. Maunder said that eight years back the operation of ovariotomy was considered unjustifiable while it was commonly performed and recognised, and he fully thought that 25 years hence gastrotomy would be in the same position.

RENAL CALCULUS IN THE KIDNEY.

Dr. Purcell exhibited a kidney which contained a large renal calculus *in situ*. It was obtained from the body of a man æt. 64, who died suddenly. The patient had been paralysed during the last eight years of his life, and had often complained of rigors and pain in the chest extending down his left arm. No symptom had ever developed itself sufficiently to warrant the diagnosis of such a calculus being present.

OPERATIONS FOR CICATRIES.

Mr. Spencer Watson showed a patient on whom he had performed several operations for the relief of deformity resulting from a burn on the neck and face; the contraction of the cicatrix in the neck had caused division of the lower lip, overflow of the saliva and dragging of the cheeks and lower eyelids. In the first operation the sound skin on the side of the neck had been brought forward in the form of two triangular flaps, which were fitted into the gap made by a transverse division of the contracted central line of the neck; complete union and a satisfactory result followed. In further operations the swollen and hypertrophied mucous membrane of the lower lip had been reduced by taking horizontal slips away from the inside of the mouth, and also by a third plastic operation on the prolabium by everting a portion of skin invaginated by the cicatrix. The boy, now æt. eight years, can completely close his mouth, and has no overflow of saliva, except slightly during his meals; the skin of the neck which was drawn in a straight line from the chin to the sternum now follows the curves of the underjaw and neck without any dragging upon the lower lip or cheeks.

Mr. William Adams read a paper on

THE GROWTH OF CICATRICES

from wounds made in early life, and the supposed wearing out of some cicatrices. In reference to this subject—the growth of cicatrices—four casts were shown, taken from the feet of the same child, at an interval of 6½ years, and proved that a cicatrix on each foot had grown during that time fully an inch in length.

Mr. A. says when a portion of skin has been destroyed, the cicatrix appears to be persistent through life, and to grow *pari passu* with the rest of the body, or rather with the portion of the body over which it may be placed. The increased size of the vaccination scars seen in adults as compared with the scars in children, and also the large bald patches seen on the scalp of the adult when small nævi had been removed in infancy, were also alluded to by the author, who considered that care should be taken to make the wound as small as possible when operating on children, and subcutaneous methods should be preferred. With regard to the supposed wearing out of some cicatrices, Mr. Adams believed that the only scars that do wear out, are those which result from superficial cuts which do not penetrate through the deeper layers of the skin into the subcutaneous fat. When the deeper layers of the skin are divided, as in the lancet wounds of bleeding and in tenotomy operations, a gap is formed between the divided deeper layers of the skin, which retract in consequence of the abundance of yellow elastic fibrous tissue in its structure, lymph is then effused in the gap, and while fibrous tissue is forming the cicatrix structure is developed. Once formed, this appears to be a permanent structure, growing as the part grows, and we have no evidence to show that it is ever absorbed or undergoes any process of wasting. There are two reasons for this permanence of cicatrix tissues—first, that the tissue is sufficiently well organised to be able to maintain itself in the general nutrition of the body secondly, that the cicatrix tissue is so widely different from the structure of the true skin; that it never can become assimilated to it, or resemble it either in the naked eye or microscopic appearances.

Mr. Brudenel Carter said that when his son was only five years old he sustained a lacerated wound of the face, which extended in length from the angle of the mouth to the lobe of the ear, and at its deepest point it went nearly down to the buccal mucous membrane.

Under chloroform he sewed up the wound with a number of very fine sutures, and the primary union which took place was perfect, the, line of union being only just perceptible and about a hair's-breadth wide. The boy who is now eight years old, has a scar seven millemetres in width, and it has also grown in length.

On November 24th, 1873,

Dr. Sansom related a case of

MITRAL STENOSIS—PERICARDIAL ADHESIONS—CARDIAC HYPERTROPHY AND DILATATION—PRESYSTOLIC BRUIT—AUTOPSY.

A little boy of 9 came under Dr. Sansom's care at the North-Eastern Hospital for children, on October 5th, 1872. He had been suffering from rheumatic fever for a fortnight, and had had a previous attack ten months before. A presystolic bruit was distinguished at the apex of the heart. Pericarditis, with friction sound, became manifest, but in a month's time this had passed away, leaving the presystolic sound as before. The heart showed a cantering rhythm, but no marked thrill. Urgent signs passed away, and the boy continued fairly well till February, 1873; then, after a fall down stairs, distress returned, and he was admitted again into the hospital. There were now signs of extreme cardiac hypertrophy, the original murmur persisting. There was much pallor of surface, but no cirrhosis; ophthalmoscopic examination showed the retinal arteries to be fine and the veins disproportionately large; there was but little œdema, and no albuminuria. Death took place on November 9th, 1873. *Post-mortem* examination showed only a moderate degree of visceral congestion. The heart was greatly hypertrophied, and the pericardium everywhere adherent. The endocardium of the left side was much thickened; the left auricle and ventricle both very large; the mitral valve funnel-shaped. The aortic valves were much thickened, but did not interfere with the blood-flow. The right side was normal.

Dr. Sansom, in exhibiting the heart as a specimen, said it furthered the view of the auricular origin of the presystolic murmur. He considered this term a good one, inasmuch as it accurately described the tone of the bruit, and also indicated a fixed pathological condition. Nevertheless, it was not so *clinically* suggestive as it might be. For clinical demonstration it might be convenient to translate our terms for valvular heart murmurs into plain English. Systolic—First-sound murmurs; Diastolic—Second-sound murmurs; Presystolic—Before-first-sound murmurs. The extreme pericardial adhesion imported many pathological phenomena and conditions unusual in cases of mitral stenosis.

Dr. Sansom also read some

CASES ILLUSTRATING THE USE OF THE PNEUMATIC ASPIRATOR IN THE TREATMENT OF EFFUSIONS.

Dr. Sansom considered that aspiration was valuable in simple pleurisy; after complete distension of the pleural cavity there were no signs for several days of absorption. In empyema, he considered the experience of it very favourable, and in hydrocephalus very hopeful.

The reading of Dr. Sansom's cases was followed by a discussion, in which Dr. John Harley, Dr. Fothergill, Dr. Broadbent, Dr. Rogers, and other gentlemen took part.

Mr. Jabez Hogg related a case of

ARRESTED DEVELOPMENT OF THE LEFT EYE-BALL,

and also a case of

CONGENITAL OBLITERATION OF PUNCTUM CANALICULUS AND LACHRYMAL DUCT ON LEFT SIDE.

Monday, December 1st., 1873.

Mr. H. Cripps-Lawrence narrated a case of

INTESTINAL OBSTRUCTION FROM EXTENSIVE FÆCAL ACCUMULATION.

Mrs. S., the wife of an Indian officer, and the mother of four children, had from early life experienced much mental anxiety and bodily fatigue, having been a great traveller. She was naturally patient and hopeful, and exhibited great power of bearing pain. She had been subject to "biliousness" and constipation for some years, and had probably suffered from gall stones. Six weeks before the obstruction, the kidneys had been congested, and during this time she had lived chiefly on milk. On 18th of last October, she complained of constipation which had lasted four days, with sickness and distension of abdomen, and flatus, with pain referred to the right hypochondrium. The lungs, heart and kidneys, with the respiration, pulse and temperature were normal; aperients were taken without effect. An enema relieved the transverse and descending colon of scybalæ, but the ascending colon was distended with fæces. On October 19th, acute pain referred to the right hypochondrium and right scapula came on, and was relieved by opium. Enemata were given twice a day, and the stomach kneaded by the hand lubricated with oil. On 21st Oct. all pain had ceased, but as no action of the bowels took place, gr. iii. of calomel with some ext. colocynth and hyoscyamus were given, followed by an aperient draught; no relief ensued and the pain returned, half-grain doses of ext. opii. were given, and the kneading and enemata continued, and on the 23rd a copious, offensive, and variously coloured fæcal motion followed the enema. The patient who before this had been unable to lie on either side, but especially on the right, could take rest on both, and from this time the convalescence was speedy and complete. Mr. Lawrence instanced this case to point out the necessity of watching the assimilation of milk, when large quantities of it were taken. His attention was drawn to the fact by the case of a diabetic patient who was treated with large quantities of skimmed milk, but though he was somewhat relieved of the disease, yet fæcal accumulation led to an obstruction, at the junction of the transverse and descending colon, ending in fatal peritonitis. Enemata were considered in relation to composition and administration, soft soap dissolved in water was recommended as having none of the disadvantages of oil as an ingredient and as being equally efficient. When the accumulation occurred in the transverse or descending colon, the patient should lie on the left side during the use of the enema. When in the ascending colon, the right side was preferable.

VALVULAR DISEASE.

Dr. **BROADBENT** exhibited the breast and spleen of a patient who had died under his care in St. Mary's Hospital, one of two he had mentioned in the discussion on Dr. Sansom's case at the previous meeting; both were considered to have constriction of the mitral orifice. In one, the presystolic or auricular systolic murmur was so greatly prolonged as to occupy the entire diastolic interval. In the other, no presystolic murmur had been audible, but only a systolic tricuspid murmur. The latter was the case exhibited. The patient entered the hospital five weeks before, suffering from dyspnœa and other symptoms of heart disease. He was found to have bronchitis, and the only murmur heard over the heart was a loud systolic bruit. The seat of maximum intensity of bruit was near the ensiform cartilage, but it was audible at and beyond the apex, and along the sternum to the base of the heart; it was not, however, audible in the back. Jugular pulsation was visible in the neck. The systolic murmur was pronounced to be tricuspid regurgitation and secondary to the obstruction of the mitral orifice. The patient recovered so far as to wish to leave the hospital and resume his work, he was told he was not equal to this, but obtained leave to go out for a few hours, and took advantage of his freedom from restraint to get drunk. He at once became worse, great congestion of the liver and ascites came on and later on œdema of the legs, he was tapped early in the week with temporary relief, but became rapidly worse and died Nov. 30th. The mitral valve was found to be so narrowed as scarcely to admit a finger. The left auricle was enlarged and thickened, the right ventricle and auricle dilated and hypertrophied, and the tricuspid orifice dilated very considerably. The spleen was exhibited to show some of the embolic patches common in this affection.

A NEW METHOD OF DETECTING AND TREATING VESICAL CALCULI.

Mr. W. **NAPIER** showed an instrument called "The Calculus Detector." He had spent much time in producing this instrument, and thought it was unique in its mode of action, which depended on ocular instead of aural proof. Similar in form to an ordinary sound, it is coated with pure lead from the commencement of the curve to its termination, and on the extreme susceptibility of the lead when highly polished, to receive the impression when coming in contact with any hard substance, he depends for immediate detection of the presence of stone in the bladder. When, from any exceptional causes, the operation for removal has been delayed until a stone has attained to large dimensions, he deprecated the practice of lithotrity at all, and expressed his conviction that the patient's hope of recovery then lay in lithotomy, but in cases favourable to lithotrity he desired to prove that many or even most of the evils consequent on the present system might be avoided by an improvement in what may be termed the after-treatment. By means of the other instrument he had invented, called the "calculus extractor," he thought that present suffering and future complications may be greatly decreased. After enumerating several of the obstacles that at present come between the operator and a successful issue to lithotrity cases, such as, distress to the patient from the presence of portions of stone too large to pass naturally, the premature repetition of the first operation that this renders necessary, and the abrasion of the mucous membrane consequent on the withdrawal of the crushed fragments resulting occasionally in permanent stricture, he went on to explain the means by which he hoped to increase their avoidance.

The instrument he showed consisted of a delicate India rubber tube, terminating in a funnel-shaped orifice resembling an ordinary convolvulus flower, large enough to contain a calculus or a portion of a calculus of considerable size. It is capable of being inserted into the bladder by means of a silver canula in which it is enclosed, and when permitted to expand, on the withdrawal of the latter, it encloses in its folds any foreign substance that the position of the patient and the flow of the urine would determine, towards the natural outlet, and on the slightest attempt to draw it away it folds itself around any object or objects that have fallen into, which completely enveloped in its delicate elastic membrane, may be safely extracted without contact with the urethra, which is entirely protected from abrasion. He next drew attention to the temporary point with which the canula was fitted, which he hoped was a profitable discovery, not only in connexion with it, but in every case where it is expedient to close the mouth of a catheter or canula. It is made of cocoa butter, which has a peculiar property of dissolubility under a moderate heat, the sized point which he uses dissolving in a temperature of 96° in about a minute, it has also the further advantage of lubricating the passages through which it is passed. He concluded his notice of these instruments by pointing out the adaptability of the convolvulus tube to the purpose of a self-retaining catheter.

He then gave a practical demonstration of the mode in which the instruments were used. A stone previously inserted in a preparation of the human bladder was first detected and then drawn out. An animated discussion followed, in which several eminent surgeons took part; the objections raised being met by Mr. Napier with the assurance that they were such as in the first instance had suggested themselves to him, but that actual application of the instruments convinced him that they were merely theoretical. After free criticism both favourable and unfavourable to the inventions, the speakers severally concluded by complimenting Mr. Napier on the originality and ingenuity that the instruments displayed.

MONDAY DECEMBER 8TH, 1873.

Dr. S. O. **HABERSHON**, President, in the chair.

Mr. **BRAINE** showed a specimen of

CARVED RHINOCEROS BONE REPRESENTING TWO INCISOR TEETH JOINED TOGETHER.

Dr. **SEMPLE** read a paper entitled

WHAT IS DIPHTHERIA?

illustrated by a recent epidemic in Italy.

Mr. **DURHAM** said the difference between croup and diphtheria was not apparent in the post-mortem room, and though a deposition of fibrinous membrane took place in both, yet that croup was a simple local disease, while diphtheria was a severe constitutional affection. He regretted that the operation of tracheotomy was not performed early enough, and that the details in the after-treatment were often not sufficiently attended to.

Dr. **FOTHERGILL** read a paper on

THE DEPRESSANTS OF THE CIRCULATION AND THEIR USE.

December 15th, 1873.

Dr. S. O. **HABERSHON**, M.D., F.R.C.P., President, in the Chair.

Dr. **FOTHERGILL** then related the history of two cases treated by physostigma which had occurred in the practice of Dr. Crichton Browne. Dr. Fothergill remarked that physostigma not only lowers the activity of the cardiac ganglia, but also renders them very susceptible to extrinsic impressions. Syncope is not uncommon in patients at Wakefield during their daily walks; while on a course of the bean no unpleasant consequences have followed as yet. Dr. Forbes, at Shoreditch, has found the bean useful in the treatment of acute mania in its earliest stage. Both aconite and physostigma have powerful antidotes, belladonna and physostigma being antidotal, and digitalis and aconite.

Mr. BRUDENELL CARTER said that the contraction and dilatation of vessels was best demonstrated by the ophthalmoscope. He mentioned the case of a lad at present under his care, in whom there was spontaneous pulsation of the retinal arteries; he suspected cardiac mischief, but none was found. The sphygmograph showed a high degree of arterial tension, that is, a general narrowing of the blood-vessels, and thus the boy's retina is being starved, and the boy's vision is rapidly failing.

Dr. CRISP said that it was assumed by all present that arterioles and some of the larger arteries were muscular, but he had failed to find unstriped muscular fibres in the coats of the vessels, and he did not believe in their contractility.

The contractility of arteries and arterioles seemed to be so clear that he was surprised that anyone could reasonably doubt it. In common with hundreds of others, he had observed it over and over again. Lester (Phil. Trans., 1858) showed that by irritation of the vaso-motor centre such complete contraction of the arterioles of the web of the foot of the frog could be produced that it became white and exsanguined, as if benumbed with cold.

MEDICAL OPINION.

MEDICAL EDUCATION.

THE *Lancet* observes that Professor Harvey, following up the train of thought embodied in his letters to Sir James Clark some fifteen years ago, recommends that the student on the very threshold of his studies should be made and kept practically cognisant of the fact that his goal is the prevention or cure of disease, and not anatomy, physiology, or pathology. This is Professor Harvey's first postulate. The others are, that the curriculum should be not less than four years; that due regard be taken to the relative value of the several subjects of study; while his fourth implies the possibility of mastering sufficient knowledge to begin professional life at twenty-two. Professor Harvey concludes, and we think justly, that the system of medical education traditionally handed down and still enforced would be found wanting, and that the result of an inquiry would be the enactment of a system of medical education and examination widely different from that which now prevails.

Professor Harvey's scheme is unsatisfactory in one particular. He omits to state the amount or degree of preliminary training with which the student should enter on professional study. This is a most important point. Between the well-grounded scholar and mathematician and the smatterer in philology and mathematics there is all the difference on the professional curriculum; between the thorough-bred and the under-trained race-horse on the turf. Formed habits of study give an advantage which no amount of natural ability will countervail. Professor Harvey does not tell us on what subjects these habits are to be moulded, and leads us to suspect he would support Professor Huxley's scheme of thrusting botany and zoology into the grammar-school curriculum to the exclusion of classics and mathematics, whose discipline the so-called sciences of observation can never replace. Such is not the mode to which the Lathams conformed as students, or would recommend to the rising generation.

Dr. Latham recommends that any competent body should draw up and periodically publish schedules defining the range within which the examiner shall restrict himself in each subject, so as to leave out the superfluous and retain nothing that cannot be mastered thoroughly by the student in a given time, and then the examination may be as rigid or exacting as you please. In the great seat of learning with which the name of Goodsir is associated, the scheme has virtually been in practice for years. The student is enabled to judge what his teacher regards as essential, and economise energy accordingly. The London University demands too much in each department from the student, and, admirable as are its degrees, yet the system tends to crush the spirit of independent investigation often developed in pre-graduation years.

ALCOHOL.

THE *Deutsch. Archiv. f. Klin. Med.* says that Dr. Riegel has made eighty-six experiments on convalescents, and he concludes that alcohol has the power of lowering the temperature, but only a few tenths of a degree, while in exceptional cases the temperature rose.

The repetition of the doses diminishes their effect, and those who habitually drank alcohol exhibited no depression of temperature. Riegel also experimented on fever patients, and here the depression was less or none. He therefore regards it as useless to lower the temperature, but thinks it may be valuable to prevent tissue waste.

Professor Sée, at the Charité, lately lectured on the subject of alcohol, and strenuously supported the theory that alcohol prevents tissue waste. He distinguishes between the effects produced by various quantities, and thinks we should concern ourselves only with moderate doses. These he declares excite the respiration and the circulation at the surface, while they hinder tissue waste, the alcohol being consumed instead of the tissues. Under the influence of alcohol, Sée says the waste of the muscular system is carried off by the increased rapidity of the circulation, and by this he explains its use by all nations when about to undergo exertion or after such efforts.

In the *Practitioner* Dr. Anstie has taken up the subject, and announces he will shortly publish a new series of experiments, pending which he cannot give an epitome of his views. He says, however, in the December issue, that the great urea waste in fevers may be limited by alcohol under certain conditions, and that this is not a mere momentary damming up of the waste, but that the excretion remains at a low level throughout, and defervescence is not followed by increase of urea waste.

Nature, of Dec. 18, published an abstract of Prof. Binz's paper at the British Association for the Advancement of Science, and as so many draw upon Binz, we are glad to hear that his paper is to appear at length in an early number of the *Journal of Anatomy and Physiology*. Binz concludes that alcohol has a threefold power in putrid fever: 1. Diminution of heat; 2. Reduction of the putrid processes; 3. Rising of the action of the nerves and of the heart.

Nature adds that Dr. Brunton said the key to these conclusions was lessening of the oxidation of tissues by alcohol.

The report of the New York Board of Health for 1872 shows that alcoholism proper, as a direct cause, was credited with 220 deaths in that year, of which delirium tremens occasioned 101. An accurate record, however, was kept throughout the year of *all* cases where intemperance was certified to have been *instrumental* in producing death, and the result of this inquiry was as follows: 556 cases, 300 being males and 256 females—about 11 each week. But 7 of these inebriates passed beyond the age of 70, but 18 beyond 65, and 45 beyond 60 years. The largest proportion of deaths (102) took place between 35 and 40; 10 fell victims between 15 and 20 years of age, and 48 before they had arrived at 25. In 225 instances, no occupation was stated upon the certificate, most of these being females. Seventy of those given were labourers, 19 clerks, 18 carmen or drivers, 13 carpenters, 8 pedlars, 8 machinists, 8 liquor dealers, 7 bar-tenders, 7 butchers, 7 painters, 7 shoemakers, 6 blacksmiths, 6 boatmen, 5 merchants, 5 grocers, besides other occupations—315 were Irish, 125 Americans, 61 Germans, and 20 English.

The *New York Medical Record* reports the following experiments :—

After having shown that urine, on putrefying, produces alcohol, M. Béchamp has sought to discover alcohol in the urine of persons who have previously been subjected to a *régime* of abstinence from wine and alcoholic drinks. In the urine collected in these conditions, and in which fermentation had been prevented by the addition of a little creosote, M. Béchamp has found enough alcohol to be able to set it on fire. In one of the experiments there was enough alcohol in two litres of urine to be determined by the alcoholometer. The author believes that the liver produces alcohol physiologically.

The *Philadelphia Medical Times* comments on this as follows :—

This is confirmatory of the researches of our countryman, Dr. Ford, who years ago obtained alcohol from the blood of animals which had lived lives of strict teetotalism.

IN THE LABORATORY.

PREPARATIONS OF PHOSPHORUS.

The *Boston Journal of Chemistry* gives the following formula as a test for albumen.

Phosphorus . . .	1 gr.
Chloroform . . .	6 ʒ
Glycerine . . .	2 ℥

Dissolve the phosphorus in the chloroform, and then add the glycerine. This forms a pleasant fluid preparation of phosphorus, which is not decomposed by the addition of water. Dose, a teaspoonful three times a day.

A new preparation of phosphorus has lately been brought forward by Mr. A. W. Gerrard, of University College Hospital. This consists of a solution of phosphorus in heated resin (the solution contains four per cent. of phosphorus), which is made up into pills with sugar and tincture of tolu. This is a very elegant preparation, and the pills are almost entirely free from any odour of phosphorus, although they are without any of the usual coating.

A REAGENT FOR OILS.

Dr. Isidor Walz writes in the American *Chemist* suggesting antimony terchloride as a reagent for oils.

He first attempted to use (Merck's) "solution of terchloride of antimony, sp. gr. 1·345," but found that this would not mix well with oils. He afterwards obtained good results by concentrating this solution on the water bath to a syrupy consistence.

The experiments were made by putting two or three cubic centimetres of the oil into a test-tube, adding a few drops of the reagent, and shaking till a mixture was effected.

In the case of animal and vegetable oils a rapid darkening generally ensued, the colour turning to a reddish, greenish, or dirty brown, accompanied generally by a perceptible rise in temperature.

Some characteristic reactions were observed with the following :—1. Olive oil. Formed a white emulsion, rapidly passing through light to dark green. No perceptible rise in temperature. 2, Cotton seed oil. Turned chocolate brown, with evolution of considerable heat. One example solidified. 3. Neat's foot oil. Turned pink ; subsequently darker and thicker. The temperature rose. 4. Rosin oil. Turned purple.

Of the petroleum oils gasolene, benzine, and kerosine were tried. After shaking, two strata separated in the test-tube. A portion of the oil was resinified, the resin adhering to the sides of the tube as a thin, peculiarly coloured, bluish-green-purple coating. The lower stratum was of a bright red colour.

With oil of turpentine a very violent reaction ensued, attended by the evolution of heat and the deposition of a yellowish resinous mass.

NOTES, NEWS, AND GOSSIP.

A DOCTOR'S STORY.

BY W. M. CARLETON.

I.

Deacon Rogers he came to me ;
"Wife's a-goin' to die," said he,
"Doctors great, an' doctors small,
Haven't improved her any at all.
Physic and blister, powders and pills,
And nothing sure but the doctors' bills !
Twenty old women with remedies new
Bother my wife the whole day through—
Sweet as honey. or bitter as gall—
Poor old woman, she takes 'em all :
Sour or sweet, whatever they choose,
Poor old woman, she daren't refuse.
So she pleases whoe'er may call,
An' Death is suited the best of all.
Physic and blister, powder an' pill,—
Bound to conquer, and sure to kill ?"

II.

Mrs. Rogers lay in her bed,
Bandaged and blistered from foot to head.
Bandaged and blistered from head to toe,
Mrs. Rogers was very low.
Bottle and saucer, spoon and cup,
On the table stood bravely up ;
Physic of high and low degree,
Calomel, catnip, boneset tea :
Everything a body could bear,
Excepting light and water and air.

III.

I opened the blinds—the day was bright,
And God gave Mrs. Rogers some light ;
I opened the window—the day was fair,
And God gave Mrs. Rogers some air.
Bottles and blisters, powders and pills,
Catnip, boneset, syrups and squills,
Drugs and medicines, high and low,
I threw them as far as I could throw.
"What are you doing ?" my patient cried ;
"Frightening Death," I coolly replied.
"You are crazy ?" a visitor said :
I flung a bottle at her head.

IV.

Deacon Rogers he came to me :
"Wife is a-comin' round," said he.
"I re'lly think she will worry through—
She scolds me just as she used to do.
All the people have poohed and slurred—
All the neighbours have had their word ;
'Twas better to perish, some of 'em say.
Than be cured in such an irregular way."

V.

"Your wife," said I, "had God's good care,
And his remedies—light and water and air.
All of the doctors, beyond a doubt,
Couldn't have cured Mrs. Rogers without."

VI.

The Deacon smiled, and bowed his head ;
"Then your bill is nothing," he said.
"God's be the glory, as you say !
God bless you, Doctor ! good day ! good day !"

VII.

If ever I doctor that woman again,
I'll give her medicine made by men.

THE DOCTOR.

ENRICUS CORDUS, whe died A.D. 1585, doubtless told his own experience as well as that of his apostolic succession, in the healing art :—

"Tres medicus facies habet : unam quando ragatur,
Angelicam ; mox est, cum juvat, ipse Deus.
Post ubi curato, poscit sua prœmia, morbo,
Horridus apparat, terribilisque Sathan."

("Three faces wears the doctor : when first sought,
An angel's—and a God's, the cure half wrought ;
But when, that cure complete, he seeks his fee;
The devil then looks less terrible than he.")

Pope sang in the same strain, though not one of the brotherhood :—

"God and the doctor we alike adore,
But only when in danger, not before ;
The danger o'er, both are alike requited,
God is forgotten, and the doctor slighted."

DR. D. CLARK, *Canada Lancet*.

NOTICES.

The Doctor is published Monthly, price Sixpence, and sold by all booksellers. It is also supplied by the Publishers named at the foot of the last page.

Subscribers paying in advance receive the Doctor post free at the published price. Subscriptions may begin at any time, but must end in December. This is necessary on account of the multitude of small accounts.

Post-office orders or cheques to be made payable to Baillière, Tindall, and Cox, 20 King William street, Strand, London, W.C. Where it is difficult to obtain a Post-office order, postage stamps (half-penny ones preferred) may be sent. No form of subscription is necessary, an ordinary visiting card or name and address on paper, enclosed with the amount of subscription, will secure the regular transmission of the Doctor as soon as published. The Subscription for the year, is 6s. Post Free in the United Kingdom.

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THE DOCTOR.

LONDON, FEBRUARY 1, 1874.

Multum in parvo.

THE GENERAL ELECTION.

The General Election, in the midst of which this number appears, came so unexpectedly upon the country that it is to be feared few preparations have been made to turn the event to account in reference to the many subjects which medical men have at heart. This is to be regretted, since we had hoped the next Parliament might more truly represent us than the last. First of all it was to be desired that several doctors should find seats, but the lists of candidates already published give us no hope at all that the number will be augmented. Two medical members of the late Parliament—Drs. Dalrymple and Clement—have been removed by death, and we fear that two additional medical men will not be found to take their places. Dr. Lyon Playfair was not a medical man at all; his doctorship was only a courtesy one, derived from a Ph.D. of German origin. He did indeed try to palm himself on the constituency as a medical candidate, and, to the regret of many doctors, obtained the seat. But he has done nothing for the medical graduates—he has rather thrown them over, and now, in his new address, seems inclined to adopt, in a modified form, the impracticable proposal of the small clique of wire-pullers of the British Medical Association, who, by what they incorrectly call direct representation, fancy they could reform the Medical Council. This is of course a mere bid for the votes and interest of that clique, but we trust it will not be forgotten that Dr. Playfair seems to have taken no trouble to serve medical men, while he has deserted their cause in reference to the only sensible plan of reforming the General Medical Council. Considering the circumstances of his first election, this is an offence not to be condoned by taking an office which has no concern with graduates—medical or other.

To every medical candidate we heartily wish success; but as they are so few, it behoves doctors to weigh carefully the claims of others, and without submerging party, to urge upon their own candidates the claims of professional questions.

All political parties alike will be anxious for the support of the doctors in the constituency, and therefore, short as the time is, it is highly desirable to bring before candidates the questions that are of such moment to the profession.

The first of these in importance as the basis of all others, is a practical and constitutional reform of the General Medical Council, so as to bring that body into harmony with the profession, and make it useful to the State. To accomplish this the members for the Corporations and Universities must be elected by those who hold the medical diplomas of those bodies. This extension of the professional franchise, which, with several other reforms, was first proposed by Dr. James, has been absurdly called the plan for "indirect" representation. It was adopted at a large meeting of the Medical Association, but afterwards reversed in a small meeting convened by the wire-pullers, who press for a few Members of the Council to be elected by registered practitioners—apparently in the hope that they may themselves be elected.

May the day be far distant when those who have thus betrayed the profession, and who are in office by virtue of no principle of representation, shall be able to speak as the elected representatives of British medical men. They have hitherto done nothing to merit support—their policy in the Association has been one of selfishness, and they have done all they could to stifle representation. What a mockery then is it for them to talk of representation in the General Medical Council. That is a reform which independent men may ask for—it is one we hope medical voters will bring forcibly before candidates, and in doing so let them remember that the Association's scheme for direct representation is a sham, and the only reform of any value is the extension of the professional franchise by giving a vote for the representative in the General Medical Council of each University and Corporation to the graduates and members respectively.

CHRONICLE.

WATER DIET IN FEVER.

We all remember how freely diluents have been employed in fever, and that not a few have preferred to permit their patients to slake their thirst with cold water. Dr. Luton of Rheims, has gone still further, for he declares that for the last four years he has treated typhoid by an absolute water diet. Nothing but good fresh filtered water, occasionally iced, is permitted to be taken. At first it is taken with avidity, then in moderation, at last with signs of satiety. Sometimes it is vomited at first, but is soon tolerated. At the beginning of the treatment the bowels may be a little relaxed, but they soon become moderate and less offensive; after a time constipation may ensue. The duration of Dr. Luton's treatment, depends upon the progress of the disease. Between four and five days of water exclusively may be required, if we treat of the fever as a whole, but three or four days suffice if we think only of the enteric element of the disease. A light alimentation may then be allowed. Milk unboiled may be mixed with the water and given by spoonfuls. If this be well supported for a time, broth and soup may follow. M. Luton says that under the treatment the mortality is very low, and he has met with no evil results, while serious complications, including visceral congestions and bed-sores, disappear as by enchantment. He indicated he would give an emetic, or aperient, at the outset, or quinine at a late period, or would employ cough medicines, &c., as occasion might arise. The patient must be kept in a state of the utmost cleanliness.

The theory offered is, that the rapid alteration of food, especially sugar and starch, in contact with diseased surfaces, gives rise to acrid matters that increase irritation. By withholding everything except water for a few days, such products no longer are formed, and even ferments persist for want of their food.

MILK DIET IN DYSENTERY.

The value of milk diet seems to be always coming before us, and many are the cases in which we constantly resort to it. Dr. Barret relates in the *Archives de Médecine Navale* his experience of milk in chronic dysentery among soldiers and sailors returning from China. He considers a milk diet superior to all other treatment in such cases. He says the milk must be pure, unmixed with water, as fresh as possible, and not boiled. Sufficient milk was given to a patient, but nothing else allowed to pass his lips. Diarrhœa, if it appear, lasts but a few days. No change of diet is to be made, and no medicine given. If the physician fears the persistence of the diarrhœa, a small quantity of bismuth may be prescribed. If the milk pass through the bowels undigested, pepsine will remedy the defect in the digestive process. After a time the fæces become solid, the patient thinks himself cured, and craves other food. This is the dangerous period, for too early relaxation of the diet may cause a relapse. White of eggs, rice, cream, and the lightest possible things are to be admitted grudgingly; and when the patient feels convalescent, and will endure the restrictions no longer, he is to return by the slowest degrees to his former diet.

We have found the various alkaline waters very greatly assist patients to endure an exclusive milk diet; and in returning to other food, there are many milky puddings that English cooks prepare which render the change gradual.

TRACHEOTOMY BY GALVANO-CAUTERY.

This subject has more than once been mentioned in our columns, and will therefore interest our readers to refer to a discussion lately held at the Société de Chirurgie, where M. Krishaber introduced it. He has lately operated twice on adults. In one case, there was no blood lost at the time, but secondary hæmorrhage took place; in the other, there was hæmorrhage at the time, necessitating the application of a ligature. M. Krishaber therefore is not satisfied with the new mode, and prefers the bistoury. He advises that after the skin has been cut, the other soft tissues should be torn slowly, unless it is necessary to make haste, when he would make a single incision as far as the trachea. M. Verneuil presented a report on this memoir, in which he traversed its conclusions, and traced the history of the galvanic operation. He showed that Middeldorpff had indicated the galvano-cautery as suitable for tracheotomy, though he had not performed the operation. Bruns made two attempts, but without results. Amussat operated in 1870 but did not publish the case until after M. Verneuil's was reported in 1872. Admitting that the cases are too few to pronounce positively on its merits, M. Verneuil maintained that the results were more favourable than M. Krishaber represented.

BENZOIC ACID IN DISEASES OF THE BLADDER.

Benzoic acid and the benzoates have long been employed in this country to correct certain conditions of the urine, but our neighbours do not seem to have employed those agents much. On the 15th January, however, MM. Gosselin and Robin brought them before the Academy of Sciences, of Paris, as the best remedies for ammoniacal urine. In two such cases, a few doses of benzoic acid rendered the urine neutral. They considered that when patients were about to be subjected to operations, it is particularly desirable to remove the alkaline ammoniacal condition of the urine, and related experiments to show that ammoniacal urine might be absorbed from any solution of continuity in the bladder, or urethra, and that such absorption is dangerous.

M. Wurtz informed the Academy, what is familiar to most of us in this country, that benzoic acid changes in the ecomony into hippuric acid, and this change explains the effect of the remedy on the alkalinity.

M. Pasteur was present, and could not let the subject pass without a word for ferments, which he sees everywhere. He said the condition of the urine depended on an ammoniacal ferment, which had been studied by Van Tieghem. It could gain access from the exterior or even from the blood of a wound of the urinary organs; and so he told the Academy, that if he were a surgeon, he would heat his instruments as a preventive, and would treat urinary fermentation by injections of carbolic acid.

M. Pasteur maintained that ammoniacal urine was a proof that special germs (ferments) had found their way from the air, into the bladder? How many more sorts of germs are we to suppose always floating in the air?—Nay, always penetrating into the most unlikely and inaccessible parts.

SCRIVENER'S PALSY.

Dr. Runge, of Nassau, concludes, in an essay on this subject, as follows: The cramp of writers, or of scriveners, is a union of symptoms which may accompany the most varied lesions of the right arm, and even of the nerve centres, and in rare cases it depends even exclusively on weariness of the muscles. The destructive form of the affection has its foundation in the act of writing, and in the physiological fact of excess of muscular action. The muscles are easily subject to tetanus, which more easily reappears in the same muscle when it has once been attacked.

It is possible from these reasons to be sure of the suitableness of a treatment of this affection, electrical or other. The faradisation of the muscles, as it is useful in some recent convulsive affections, also makes the palsy of scriveners momentarily cease; but this does not give permanent success, since its favourable effect endures too short a time.

The absolute rest of the arm for a rather long period is alone applicable to all cases. In the meantime the causation should be diligently inquired into.

The author believes that minute research will have, in most cases, the result of the discovery of some lesion similar to those described, and when this remedy of muscular repose is protracted until all tendency to convulsion disappears, it will obtain more useful results than any electric action.

INTRA-CRANIAL TUMOURS IN THE ARACHNOID, AT THE POINT OF UNION OF THE CEREBELLUM AND THE MEDULLA OBLONGATA.

Dr. Giovanni Cavotti (*Revista Clin. di Bologna*) mentions the case of a patient of 20 years of age, with an aspect of suffering, and who complained of violent headache, especially in the forehead. This pain was intermittent occasionally for a short time, and was calmed by pressure.

Other symptoms.—Murmur in the ears, contracted pupil, fundus oculi nearly normal, bitter taste in mouth, want of appetite.

Diagnosis.—Headache and dyspepsia (Laxatives; leeches to the mastoid process). Sufficient amelioration to admit of the patient leaving hospital in a certain time. On returning to hospital; seventeen days after leaving, he presented the same conditions as at first. The diagnosis was then made—*cerebral tumour*, without specifying any thing either as to position or nature. The treatment employed from the first admission produced a temporary benefit, but vertigo during walking was soon noticed, which permitted of the seat of the tumour being located either in the cerebellum or in the medulla oblongata. Ten days later there came on nausea, whitish vomiting, purple visage, motionless pupils, subsultus tendinum, and carphology. Drastics and sinapisms succeeded for a moment in diminishing the symptoms, but death supervened in twenty days. At the autopsy were found congestion and œdema of the meninges, hyperæmia of the cerebral hemispheres, pyriform tumour of the size of a magpie's egg, presenting the consistence of the cerebral material and seated on the arachnoid, where it joined the medulla. In the microscope this tumour was found to be formed of a mass of pavement cells, of which many were nuclei, and immersed in the middle of a uniform mass of granular fatty matter. There were also seen therein some cholesterine, drops of fat, and corpora amylacea, a cellular membrane, and an amorphous membrane hardly distinguishable, and serving as an envelope. This was, then, an epithelial tumour on the arachnoid.

CURE OF DYSENTERY.

In a work of Schneider's (*L'Independente*) on tropical dysentery, we find some important particulars relating to the cure of the disease. In the commencement of the disease he gives a decoction of tamarinds or solution of sulphate of magnesia, and when some evacuations of mucus have come away, he gives mucilaginous drinks, and some small doses of morphia. The abdomen is kept warm with pieces of woollen, and irritating liniments are used, and on the recommendation of Copland, turpentine fomentations are much used. He also applies leeches near the arms and loins, and on the walls of the abdomen along the course of the colon. Abstraction of blood is indicated in plethoric individuals, in Europeans newly arrived, and when a synochal fever exists. Schneider uses clysters of decoction of starch with tincture of opium and acetate of lead, or in cases of bleeding, alum clysters (8,250 grammes of mucilaginous decoction). When the stools are yellowish, without any tenesmus, mucilaginous drinks containing sulphuric acid and quinine, or simaruba are useful. The diet, which at first should be quite fluid, ought gradually to be more substantial, and a little wine may be given. Calomel is useful every two hours if there are green evacuations. Typhoid conditions require the use of chlorine water, and clysters of lime water containing creasote (a drop of the latter in thirty grammes of lime water). Liquid albumen mixed with water should be the sole medicine in this case. The proportion of the white of an egg to 260 grammes of water and a little salt will suffice. Fifteen or twenty drops of phosphoric acid are recommended in chronic dysentery.

LIME WATER IN WASP STINGS.

Dr. Danverne (*L'Independente*, January, 1874), says that some years ago he was stung on the head and face by a number of wasps; the pain was great, and there were many punctures: "I had no ammonia at hand, and no druggist to run to. If it was the analogy of the suffering with that of the pain from a burn which made me think of lime water, which I knew to be most efficacious in this case, I was most fortunate. Since that date I have advised in some twenty cases, the use of lime water in wasp stings, and have always obtained the immediate cessation of the pain. The facility of at once procuring this drug, by dissolving a few grains of quick-lime in water, recommends it in preference to any other drug."

DR. PIBRAM ON SWEATING IN CONSUMPTION.

Dr. Pibram (*Aert. Intell. Blat.*, November 6th, 1873), has tried several remedies for the sweating of consumption, and finds them only useful in about an hour after being used. Such remedies are washing with vinegar and water, tannin, &c. The author has made several trials with sulphate of atropia, which have given most splendid results. After one trial of such remedy the phthisical sweating ceased, but returned as soon as the remedy was discontinued. After a longer use of the remedy, sweating was quite cured. The author made use of a dose of 1-70th to 1-60th of a grain. This appears counter-indicated by paralysis of the heart, since atropia in large dose paralyses the fibres of the vagus in the heart.

JOTTINGS FROM JOURNALS.

The *Philadelphia Medical Times* contains some very good remarks by Dr. Goodell on the "Relation of Faulty Closet Accommodation to the Diseases of Women." Irritation is brought on by the pressure of hardened fæces, and uterine flexion occasioned by straining to empty the bowels. His worst case of irritable bladder occurred in a lady who travelled a whole day in a stage-coach without finding a fit opportunity for passing water. Costiveness is very frequent in the United States, the practice of rejecting brown meal bread being unhappily common there as it is here. Hence it is that hæmorrhoids, along with uterine displacement and fæcal poisoning are of ordinary occurrence.

A cheap substitute for the wholesome bitter of the hop has been discovered by the falsificators in picric acid. Thus, the poisonous picrate of ammonia is made to do duty for lupulin. Pohl, however, has ascertained that if unbleached sheeps' wool be steeped for a few minutes in lager beer the wool, should picric acid be present, invariably assumes a canary-yellow colour.

The comparative value of ether and chloroform is ably discussed in the *Lyon Médical*. In 23,204 ether inhalations, according to the *Medical Press and Circular*, there was but one fatal case; whereas, chloroform inhalation presented actually one fatality in every 2,873 instances of inhalation. In other words, the mortality from chloroform inhalation is eight times as great as from ether inhalation. The relative value of these agents as anæsthetics is one of the grave questions of the day. The majority of surgeons prefer chloroform, but in Lyons and Boston, U.S., ether mixed with alcohol is that selected.

Rosbach, of Wurtzburg, does not ascribe Addison's malady entirely to the morbid condition of the supra-renal capsules. In his paper on the subject in Virchow's *Archives*, he considers it as a neurosis of which the pathological anatomy has yet to be determined. The entire nervous system appears to be implicated, coupled indeed with anæmia and extreme weakness, serious psychical derangement, and darkening of the skin.

The importance of disinfectants appears to be fully appreciated in Spain. Men and animals, observes the editor of the *Pabellon Médico*—an able periodical which appears in Madrid—are debilitated by the respiration of impure air, which further proves the vehicle of various organic poisons which, as thus, assail the economy in quantities which the vital powers are not always in a condition to expel. Under such circumstances disinfectants, to borrow from the Spanish idiom, sanify the atmosphere and render it more fitted for the requirements of the organism.

It is in evidence from the columns of the *Magdeburgischen Zeitung* that Dr. Paul Niemeyer, following in the footsteps of Dr. MacCormac, of Belfast, is engaged in making war against consumption. He dwells on the dreadful injury to health occasioned by causing children to sleep in apartments where the atmosphere, by reason of the impurities contained therein, is little better than an air cloaca. Dr. Düring, of Hamburg, both in private and hospital practice, has followed the rule of open windows by night. They do not appear to have got this length in Naples, where Dr. Cantani, in his rules for the prevention of phthisis, adverts principally to the exhibition of nourishing food along with frequent doses of the lactate of iron and phosphate of lime, placebos for hæmoptysis and hectic fever and the like. He commends in general terms the country air, but does not advert to the condition of sleeping and living rooms, and the desirability of not infringing sanitary rules with regard to them.

The profession of medicine is but too well aware of the obstinate nature of opacities of the cornea. Well, here comes Dr. Ansiaux, Professor of Clinical Surgery in the University of Liège, with two instances, among others, of the removal of opacities of the cornea (taies de la cornée) by means of the sulphate of cadmium. These cases are detailed in the *Abeille Médicale*. The professor prescribes the sulphate thus—

Sulphate of cadmium, 0·06 centigrammes;
Mucilage, 8 grammes;
Laudanum, 8 grammes.

The collyrium, which, if needful, may be made stronger, is applied three times daily by means of a badger's-hair pencil to the opacity, closing the eyelids for a matter of ten minutes subsequently, so that the tears may not remove the medicament.

M. Tarnier has laid a report before the Académie de Médecine, the subject being, whether competent midwives —*sages-femmes*—should not be allowed to prescribe and administer the ergot of rye. M. Tarnier is of opinion that they ought, not only in cases of protracted labour, but in consecutive hæmorrhage as well. The law, as he observes in the *Bordeaux Médical*, allows druggists or drysalters to sell poisons by the cartload, while the apothecary is forbidden to dispose of a single particle without the prescription of a medical man.

TOPICS OF THE TIME.

BURIAL, EMBALMMENT, AND CREMATION.

Such is the title of a memoir, read at the public Conference of the Society of Sciences, of Literature and Arts, at Naples, by the Vice-President, Signore Silvestro Linno, Professor in the Royal University, and which has been published in the *Giornale di Chemica et Scienz. Aff.* in the month of August, and which Dr. Polli, who has previously been cited by us on this subject, thus passes in review in the *Gaz. Med. It. Prov. Ven.*, Jan. 10th, 1874.

In this there are touched with much eloquence the principal arguments used by the favourers of cremation and its opponents; there are frequent discussions, chemical and hygienic, brought forward with great erudition, which it would take too much time to refer to in detail. We cannot, however, help alluding to some considerations as as to the last seven headings with which the author adorns his memoir, and we will make these short, and in short notes.

The author observes that in the cremation of bodies by a scientific process, there need be no smell. The saying "Remember man that thou art dust, and must to dust return," if it expresses exactly how the dead body, in obedience to the laws of natural chemistry, which is a law of all organised substances, ends in becoming dust, clearly shows how Nature, and not Art alone causes all that comes from dust to return to it. Is not hastening of this natural process an advance in science and in hygiene?

It is urged that cremation is a barbarous system, incompatible with the sentiment of human piety, and that it is difficult, imperfect, and capable of becoming injurious to public health. To this the author replies: all this refers to funeral piles, even when resinous woods of grateful odours are added; but when I can burn a body of a man entirely without the escape of gas or any fetid exhalation in a retort, who is there that will any longer assert that cremation is unwholesome.

And if, on the other hand, I show you after six or eight months of inhumation, this body, which you have preferred to confide to the ground with a sepulture of earth, black, eaten by worms and fetid, and continuing to consume in this revolting manner, do you find this a humaner or more hygienic measure?

Besides the septic exhalations which cannot fail to accompany this mode of transformation of bodies, and which cannot but slowly permeate the earth and mingle with the air, these bodies cannot fail to injure the drinking waters of the neighbourhood. The waters we drink, especially in cities like Milan, where there are no aqueducts, are derived from rivers and lakes, &c., and from wells dug so deep in the ground as necessarily to get to a clay soil, and can only come from rain water, which, penetrating the earth, carries with it the putrefying matter of dead animals. In a city like Milan, for instance, where the great monumental cemetery is situated on the northern and most elevated part of the city, at the distances of only 150 to 200 metres, who is there that can doubt that the rain-water which falls in this vast city of the dead, of tombs and dead bodies, penetrating afterwards, deeply into the soil, also comes to feed the wells of the citizens? And if this do not take place at once, our posterity must suffer.

Dr. Pietro Santa, speaking on this subject in the *Union Médicale*, September, 1873, cites the example of the villages of Rotondelia and Boillita, the cemeteries of which, placed on an elevated plain, on a hill covered with wood, appear placed in the most favourable hygienic conditions; but the rain-water, as it passes through the strata and contaminates the water must some day produce a terrible epidemic.

Cremation is indicated in war times or in times of epidemics, to avoid epidemic disease and plague.

Some deny that there is effluvium in the air if corpses are buried in earth which sufficiently imbibes the moisture, and as to the potable water being impregnated, they advise coffins of wood lined with zinc.

The burning of bodies ought to be readily preferred to burial in brick walls, or caves, which has been preferred by some hygienists, but it does not exclude embalming, nor does it force itself on the attention of any by whom it would be thought barbarous or inhuman.

Carried out by the methods of perfection now arrived at, cremation can in no way give rise to fetid or noxious effluvia, either in the air, or in the drinking water.

It hinders none of the religious rites now used, nor is any obstacle to the erection of honorary tombs, but it facilitates also the preservation of the remains of our dear ones in the home, and thus leads to affectionate recollections, and maintains more entirely the stimulus of good example.

INTRO-ABDOMINAL EXPLORATION.

In our last issue we gave the particulars of a discussion at the New York Academy of Medicine respecting the method of exploration by introducing the hand into the rectum. Although there are many objections, we pointed out the cases in which it might be justified, and expressed an opinion that the method would be tried in various ways.

The *Philadelphia Medical Times* has related a case in which this plan was adopted to explore the ureters—a calculus being suspected. The patient was 26 years of age, and as long ago as last August was seized in the right iliac region with intense pain, which at first was constant, but afterwards intermittent; it was always referred to the same locality. The suffering has been at times so great that large doses of morphia hypodermically have failed to give relief, and the patient has been kept often for hours under the influence of ether. Obstinate constipation of the bowels, with pain in the iliac region, and suppression of urine, without fever or any gastric disturbance, have been the prominent symptoms. *The most active purgatives and enormous enemata have failed to produce any action of the bowels, except at long intervals, and then the discharges have been very slight.*

The abdomen on examination did not at any time show the least swelling or evidence of inflammation; the right iliac region was very sensitive, and pressure produced intense pain. An enlargement, which was apparently the seat of the trouble and was about the size of a pigeon's egg, could be felt deeply situated. A finger passed into the rectum did not reach the enlargement. Whether the mass was a calculus in the ureter, or some impaction of the bowel, or tumor pressing on the ureter, was not determined.

November 21.—*The bowels were well cleared by a large dose of oil, followed by a stimulating enema*, as it was determined to explore the rectum by the introduction of the entire hand into the gut. After complete anæsthesia, Dr. Morton gradually dilated the anus with the fingers of the right hand; the parts quickly yielded, and the hand and forearm were readily carried into the bowel. The line of the ureter and the region of the kidney were found normal; the aorta and iliac vessels were readily distinguished; and it was definitely ascertained that no calculus existed, and that the pain was either simply neuralgic, or was dependent upon a *mass of hardened fæces, which came away just before the etherization.* The patient had no control over the bowel for two or three days after the operation, but on the fifth day the sphincter resumed entire control over the anus. Several large stools were passed directly after the examination.

November 27.—Patient discharged quite well.

We quote this case in full, though we do not profess to understand how the statements we have italicised are to be reconciled. First we are led to suppose the bowels cannot be emptied by purgatives—then that this is done prior to the operation, which, so far, is uncalled for. Would the escape of the hardened mass have cured the patient? As nothing was found, we conclude that the idea of a calculus in the ureter absorbed the attention.

The case was no doubt obstinate, and rather obscure. The operation did no harm, though it seems to have done no good. At any rate, it is far more justifiable than the more serious one of cutting down upon the kidney on suspicion of a calculus, which one surgeon has we believe, had the boldness to do.

Even intra-rectal exploration is not to be employed without consideration, and we notice that a very vigorous protest against it has already been published in the form of a letter to the *Philadelphia Medical Times*. The writer speaks of the method as one for "torturing human beings and bringing disgrace" on our art. We cannot endorse his views, inasmuch as it is easy to believe there may be cases in which the plan may confer real benefit on the patient, and there is no "torture" whatever involved. At the same time there is always danger lest a novel mode like this should be abused. The writer, however, to whom we have alluded, need not fear that such abuse will be frequent and we are inclined to think his protest would be more effectual if his tone were more moderate. We will give an extract from his letter, which will show more plainly than anything how far his indignation has run away with his judgment. Here is the picture he draws:—

"What, for instance, could be more revolting and disbolical than the insertion of the hand and the whole of the forearm, as high up as the elbow, of a big-fisted son of Æsculapius into a poor woman's bowel, to explore her pelvic organs, or to tickle her solar plexus when she has swallowed an overdose of chloroform or some other narcotic poison? Look for a moment at the operator as he is about to engage in this invention of the devil. He deliberately takes off his coat, rolls up his shirt and flannel sleeves, oils his limb, and then begins the work of insinuation, expanding first the sphincter muscles of the anus, and then going higher and higher, until his fingers touch the diaphragm, pausing meanwhile to take a full breath, to feel about for something, God knows what, and then tickling, in real earnest, the great sympathetic nerves. Can there be anything more outrageous or more disgusting than such a performance? What necessity is there for such a feat? Cannot the same ends be attained by stimulating applications to the spine, the use of the galvanic battery, flagellation, cold affusions, the insertion of ice into the rectum, and other means? In a case of chloroform-poisoning recently treated by this method, the shameless operator carried his hand four inches above the umbilicus, or a distance of sixteen inches from the anus, and, not content with tickling the diaphragm, ran his fingers against the walls of the abdomen, so that an assistant could disdinctly feel them on the outside, and then, as he withdrew the limb, he must needs carry the hand around the uterus and its appendages in search of displacements and fibroid tumours, although such manipulations were entirely foreign to the nature of the case. Then the operator, we are told, as if in ecstasy at his achievement, withdrew his hand, which was not in the "least stained with blood," and found, apparently much to his gratification, that the greatest dilatation of the anus was only ten inches in circumference, corresponding strictly to the size of his delicate forearm. *Jam satis—ohe!*"

ON GALL-STONES.

Schiff thinks that these calculi are formed of cholesterin, not because this substance is formed in too great abundance, but because the bile does not contain the principles which maintain it in solution. These are the cholates and choleates of soda and potassa, more than the alkalinity of the bile which dissolves the cholesterin. Schiff therefore advises the administration of eight grains of choleate of soda, to be given twice daily, and increased until "saturation" is indicated by irregularity of the pulse, which becomes slow during repose and accelerated by the least effort. The dose may then be diminished, but not entirely suspended—a considerable time, a week at least, being required for the remedy to produce amelioration of the symptoms.

Gall-stones are exceedingly common at Carlsbad, and Dr. Pichler, of that spa, gives (*Memorabilien*, December, 1873), some interesting notes on treatment. He obtains the best results from sub-cutaneous injections of morphia, followed by a dose of chloral by the stomach. It is certain that the effect of chloral may be greatly increased by preceding it by morphia hypodermically, so much so that the effect has been sometimes too great, so that, although Dr. Pichler is supported by Nussbaum and others, caution is required. By means of narcein, succeeded by chloroform, Rabuteau produced such an effect on a dog that he could, after waking up, be pinched or pricked without exhibiting any sign of feeling, although he walked about and knew his master's voice. Some such effect as this is seen when a dose of chloral hydrate is taken soon after morphia has been injected hypodermically. No cases would be more appropriate for the cautious employment of such treatment than those in which the passage of gall-stones is producing unpreventible agony.

The treatment of gall-stone Dr. Habershon (a) divides into that which is calculated to relieve the paroxysm; that which lessens the jaundice; and thirdly, that which is designed to prevent the recurrence of the attack. As to the first, the intensity of the pain calls for immediate attention, and by means of the hypodermic injection of morphia and the inhalation of chloroform we are enabled to afford considerable relief; these means are much more effective and better than the internal use of opium, which is with difficulty absorbed, and has sometimes been given in such large doses as to endanger the life of the patient. Externally hot fomentations may be applied, or, what is more effectual, the mixed chloroform liniment, belladonna liniment, and aconite liniment—half an ounce of the two first, and a drachm of the latter. If the bowels are confined, they should be acted upon by a free mercurial purgative and warm saline draught, or by an enema.

In hastening the removal of the jaundice, unstimulating diet and gentle action on the bowels are the best means to employ; and the saline mineral waters are often of great assistance, but must be administered with caution. Alkalies may be used with advantage, not only in facilitating the discharge of inspissated bile, but in lessening duodenal irritation. It is of great importance also where other calculi are retained, and also where there is much irritation to the pyloric region of the stomach and the first portion of the duodenum. Bismuth with alkalies is of some value in diminishing this gastric sensibility; but, whilst anæsthetics and anodynes afford immediate relief, and alkalies promote recovery, a great amount of patience is required by the medical attendant, as well as by the patient, lest the disease be aggravated by over-active treatment.

ELECTRO-THERAPEUTICS IN ITALY.

DR. D'ANCONA (*Gazz. M. Ital. Pro. Ven.*, Dec. 13th) relates several cases of paralysis treated by him by electricity. Among others were five cases of paralysis of one hand and finger by compression of the radial nerve. In one case a man, æt. 27, having drunk too much, fell asleep on a stone seat with his right arm below his head, and awoke in three hours with formication and paralysis of the fingers. He could hardly close the right hand or extend it, and the arm was with difficulty extended. The electro-muscular contractility was normal, as was sensibility to pain. Five applications of localised faradisation of the secondary current made him quite well.

In another case occurring in a man, æt. 58, after carrying a great load to the railway-station, he found himself unable to extend the right arm, or press with it. The electromotor contractility was found to be normal, as also the sensibility to pain. After six applications of Stöhrer's faradisation apparatus he was nearly cured; but it required twenty-two applications of electricity to restore him to his original power.

(a) Lettsomian Lectures for 1872, "On Diseases of the Liver."

In another case a man æt. 45, fell asleep upon his left arm, which was fully extended. In the morning he found it impossible to extend this hand. Nothing abnormal was found in the nutrition of the hand, the sensibility to pain was normal, and the parts were well nourished. Faradisation was employed, and in four sittings great amelioration was noticed. He was cured in twenty sittings.

In another case a man, æt. 33, slept in a carriage after drinking freely, with his left arm under his head. He waked after eight hours of sleep, feeling the whole arm heavy, and observed that it was impossible to extend the fingers or the hand on the arm. No want of nutrition was observed in the left hand, which was at right angles with the forearm, but it was impossible to extend it or move it laterally. In twenty sittings the patient was nearly well.

Another man, æt. 60, while drunk, fell asleep on a chair with his right arm compressed beneath him. After this it was impossible to extend his hand. He came after the paralysis had existed for sixty days. The electro-muscular contraction was much weakened in all the muscles paralysed, whether the interrupted or continuous current was used. The sensibility was normal. The treatment made use of was faradisation, and in ten sittings no advantage was obtained; the current made use of was always weak, as the patient could not bear a strong one. In the eleventh sitting, galvanisation (12 El. Stöhrer) was made use of, with rare interruption on each paralysed muscle; in fifteen sittings some slight movement of extension was noted in the hand; but the benefit was not great and the patient disappeared.

From these four cases the author concludes that traumatic paralysis of the hand is not cured spontaneously, that if left to itself for long it is almost incurable.

The author then relates four cases of atrophic paralysis of children treated by electricity as follows:

A girl æt. 9 months was seized with fever and convulsions, and after this had passed away the right arm was found to be immobile. Three days after the paralysis the following appearances were noted: The right arm was developed equally with the left, but being motionless, when the palm of this hand was pricked it gave signs of sensation, but the limb remained motionless whilst the other was moved violently. The fingers were flexed and the hand slightly clenched. The flexor muscles of the fingers and forearm contracted normally to both currents, but more manifest contractions took place under the galvanic current. Sensibility to pain appeared normal.

The positive pole was placed on the brachial plexus or on the radial nerve on the humerus and fixed there; the negative was moved over the various paralysed muscles with rare interruptions and a pretty strong current (10 El. Stöhrer) for fifteen minutes. Even in the eight elements there were noted good contractions in the second sitting. At the sixth there were already voluntary motions of the limb and some evident extension movements. After twenty-six sittings the child opened and shut the hand quite well.

In another case in a child of 6 months after a fever, there was complete immobility of the left lower extremity. Fifteen days after this the child was seen. The limb was flaccid and not able to sustain the weight of the child. There was no contractility under the induced current in any of the muscles. A continuous current of mean strength (20 El. K.H.) produced evident contractions. The first sitting the author employed 30 El. K. H. the positive pole being fixed on the ischiatic nerve and the negative pole moved over various points of the muscle for twenty-five minutes. After the fifth sitting some voluntary movements were possible, and after the seventeenth this was more manifest; but the patient came no more to the physician.

In the next case in a girl, æt. 5, there was, after a severe fever with convulsions, paralysis of the right upper extremity, and the patient was first seen thirty-seven days after the paralysis came on. The right arm was flaccid and hung down by the side, there was imperative flattening in the deltoid region with a certain amount of want of nutrition in the whole of the right humeral region. In the forearm there was no difference between the arms. The child could not raise the limb nor extend the forearm, but could flex it and also the fingers, which, however, were flexed weakly, the thumb was forcibly abducted, and could not be opened, extended, or flexed voluntarily. Sensibility was normal.

The deltoid muscle, the biceps, the brachiales, the supinator layer, the radiales, extensor comminus digitorum, and extensor proprius pollicis, with the abductor and extensor longus pollicis did not respond to the induced current, but only when the current was closed with a galvanic current of 20 El. Stöhrer were there obtained some mediocre contractions. All other muscles in the limb respond to both modes of current. On the first occasion 20 El. Stöhrer were used for twenty to thirty minutes; thirty sittings were employed, but the patient was not benefited, and disappeared.

A child, æt. 3, had, when 2 years old, fever lasting fifteen days; and after this the left lower limb was found paralysed. He was seen nearly a year after this. The left lower limb presented a rather wasted appearance. There was no contractility to the induced current even when very powerful, in any of the muscles which were paralysed (sartorius, cruralis, adductor, &c.) The sensibility was normal. Two hundred daily sittings were made use of, but fruitlessly.

It remains proved from these cases, says the author, that the alteration of the muscular fibre takes place at once on the suspension of volition. In the first period galvanic contractility persists completely, but this goes on always lessening until complete extinction. As long as this continues complete pretty rapid cure may be obtained. Finally, all hope of advantage or cure is entirely dependent on the rapid application of the electric methods. This should be deeply engraved in the minds of all physicians.

SPECIAL DEPARTMENT.

REPORTS ON LIFE ASSURANCE.—I.

Some of our supporters have suggested to us the medical aspects of life assurance, as a subject on which they would be glad for us to issue a few articles, and as every doctor is interested in life assurance apart from the occasions on which his professional opinion may be sought, we have decided to follow up our reports on other subjects by the series we begin to-day.

Fortunately, we have at our service, the aid of gentlemen engaged in the practical work of advising companies, as well as of an actuary who has spent years in assurance work, but who is not identified with any single company. We hope, therefore, to be able to collate and report upon many points of interest to our readers,—firstly, as doctors, but also as shareholders or policy-holders.

Our reports will not be polemical, though we had better state at the outset that we believe in the doctrine that the "labourer is worthy of his hire," and we assert that no company is justified in asking any doctor to fill up a certificate without giving him a fee.

This question is nearly settled—most respectable offices having admitted the principle. A few, however, still hold out, and therefore whenever application is made for information, the doctor should enquire before replying, unless the application be accompanied with a distinct promise to remit. Indeed, it would probably be the wisest plan to require the fee before returning the form filled up, and we would suggest to the majority of offices who now pay, that it would be more satisfactory to enclose the fee with the application.

In these reports we propose to give, in a condensed form, information as to the literature and the progress of life assurance in every way in which it affects the profession. We shall chronicle such new features as come under notice—give abstracts of the accounts or reports of some of the companies as they are issued from time to time in accordance with recent legislation, and so far as in us lies, promote the great objects life assurance is intended to attain. Its benefits to professional men cannot be exaggerated, and we strongly urge all our readers who have not yet done so to become policy-holders, and thus set the example of prudence to all their patients and friends.

We shall feel obliged to correspondents who may furnish us with such remarks or facts as they deem desirable to be published for the benefit of the profession.

Having stated our programme in regard to these reports, we make a beginning by recording a new feature of assurance of special interest to the professional classes of this country, and which has only just been made public, though it was known that statistics were being collected for the purpose.

About two years ago the directors of the National Life Assurance Society determined to endeavour to collect reliable data from which might be found the rate of mortality prevailing at early periods of life among the upper and professional classes in this country.

In answer to applications made by that society, there has been obtained a mass of facts sufficiently large to furnish the means of ascertaining with reliability the law of mortality sought for, as well as to afford much valuable information upon various other points of general social interest. The primary object of the directors was, to be enabled to establish an extended plan of educational and other endowments, the premiums for which should be based upon more trustworthy data than any which were then available. This having been satisfactorily accomplished, new tables of premiums for such assurances have been prepared, which turn out to be materially lower in amount than those usually charged heretofore.

QUARTERLY REPORT ON DERMATOLOGY.

By H. S. Purdon, M.D., L.R.C.P.,
Physician to the General and Skin Hospitals, Belfast.

NEUROMA OF THE SKIN.

We have received an interesting reprint from the *American Journal of Medical Science* of a case of *Painful Neuroma* of the Skin, by Dr. Louis A. Duhring. From the pamphlet we take the following extracts:—

"David W., æt. 70, Irish, boiler-maker, but of late his trouble has incapacitated him for any kind of labour. His previous health has been excellent, and none of his family or relatives ever presented any disease similar to that from which he is suffering. About ten years ago he first noticed the presence of a few, small, round nodules, situated in the skin of the left shoulder, attended with decided itching, but without pain. These nodules soon multiplied and increased in size. For four years they continued to appear in numbers, and by the end of this time the arm and shoulder were well studded with them. For the past five years their increase in number has been slower, but new ones have continued to appear up to the present time. Some of the older nodules have grown somewhat in size during the past five years. He is quite positive that it was not until three years after the first elevations were noticed that there was any pain in or about them. Such are the important points in connection with the early history of this case. Since I first saw the patient, six years ago, there has been but little change in the appearance of the growth, with the exception that new scattered tubercles have developed at various points.

"The disease is now characterised by the presence of numerous small, rounded, hard nodules, occupying the left scapular region, shoulder, and outer surface of the arm, as far down as the elbow. They are incorporated with the skin and subcutaneous tissue, varying in size from that of a pin's head to that of a large pea, and at certain points are situated closely together. They are elevated from one to four or five lines above the level of the surrounding healthy skin, and present a marked tubercular, knotty appearance. They are firmly seated in the skin, and are in no instance pedicellated.

"The original starting point of the affection appears to have been at or about the insertion of the deltoid muscle, for here the tissues are now thickest and the pain most severe. During a paroxysm of pain, the tubercles and skin involved change colour rapidly, passing through various shades until they become purplish, and even livid at times. As the paroxysm is ushered in and while it is at its acme, the parts are seized with a quiver, which extends over the whole arm and is paroxysmal, occurring every few seconds during the height of the attack.

"Intense pain, of a paroxysmal nature, constitutes the distressing feature of the disease. This was developed gradually, first showing itself about three years after the appearance of any external manifestation, and soon increased in severity, keeping pace with the development of the disease. For the last five or six years the pain and paroxysm have been about the same in degree and character. The pain during a paroxysm is excruciatingly severe."

Dr. Duhring refers in conclusion to cases reported by the late Professor Smith, of Dublin, and to a case of Vallender's, quoted by Virchow.

INFLAMMATORY ECZEMA.

Inflammatory eczema in a man 66 years of age. His father died of consumption. One year ago one of his ankles was swollen, and "itched him" very much. Soon after, the other ankle was affected in the same way, but in both instances the disease soon disappeared. When admitted into the hospital his right leg was immensely swollen, and was tense and hard. The points of interest in this case are the simplicity of the treatment and the rapidity of the cure.

His was a bad case of eczema, in a bad constitution, yet received no internal remedies, nothing but ward diet, quiet in bed, the local application of bicarbonate of soda, ʒi. to the ℥i. It is highly important in the use of this remedy (soda) that the parts should be kept *constantly* wet with the lotion. A failure to observe this precaution will bring with it a failure to cure.—*New York Medical Record*, Nov. 1st, 1873.

SKIN GRAFTING.

From the same journal we extract the method of setting grafts adopted by Dr. Van Wagenen, of Bellevue Hospital, New York.

The doctor has taken a great interest in this subject, having set over 2000 grafts. The plan which he now follows, after trying all the plans of which he could find any account, is this: Take up a good thick fold of skin, and from a smooth portion of this fold shave a piece of skin, embracing in its thickness a few cells of the true skin, and somewhat variable in length and breadth. A good size is three-fourths of an inch in length and three-eighths of an inch in breadth.

The ulcerated surface to which they are to be applied must have the shining glue-like appearance removed from the granulations by careful wiping before the grafts are set. The grafts are then set about one inch from the peripheral edge of the ulcer, at intervals of one-half or three-quarters of an inch, forming a complete circle. As soon as set they are dressed with lint smeared with simple cerate, and over this a roller is applied. This dressing is to be removed the *next day* after the grafts are set, and be renewed every day. After the second or third day the ordinary strapping can be resorted to, and where the space between the circle of grafts and the peripheral edge of the ulcer becomes closed, another circle of grafts may be set, and so on until complete cicatrization has been secured. If these rules are strictly adhered to, scarcely a graft is lost, the firmness and rapidity with which they adhere to the granulations sometimes being extremely marked.

PERFORATING ULCER OF THE FOOT.

MM. Duplay and Morat (*Arch. Gén. de Méd.*) ascribe perforating ulcer of the foot to a degeneration of the nerves of the part. This degeneration may be of entirely peripheral origin, just as frost-bite induces degeneration of the nerves and a tendency to ulceration; or it may be connected with a more deeply-seated affection of the sciatic nerve, or with disease in the spinal cord. The authors, therefore, place perforating ulcer of the foot in the same category with the ulceration of the cornea which follows section of the trigeminus nerve. The principal symptoms agree with this view, being indicative of disturbance of sensation and nutrition. The inflammation which surrounds the ulceration affects all the tissues, including the arteries, which are sometimes diseased to so great an extent that many have attributed the ulceration to arterial sclerosis. The prognosis will evidently depend on the possibility of treating the nervous disorder with success.—*Phil. Med. Times.*

INOCULABILITY OF ECTHYMA.

Vidal, one of the physicians to the St. Louis Hospital, Paris, in an interesting paper in the *Annales de Dermatologie et de Syphilographie*, No. 5, 1873, gives the result of some experiments with the inoculation of the matter taken from the pustules of ecthyma. Two series of experiments are recorded, one with the pus of ecthymatous pustules developed in the course of grave typhoid fever, the other with the pus of ecthyma simplex. The experiments were conducted with every requisite precaution, and their results may be summed up as follows:—

1. The pustules of the ecthyma of typhoid fever and those of ecthyma simplex are auto-inoculable.
2. The pustule of inoculation follows, in the phases of its development, a course identical with that of the original pustule. The first day, several hours after inoculation, we see at the place of puncture a red point, already a little indurated, and which is usually the seat of considerable itching. The second day the redness extends itself, and an elevated, firm nucleus forms. The third day the redness is greater, the inflammatory indurated nucleus points and forms the base of a little vesicle containing a small quantity of cloudy, serous matter. The fourth day the pustule of ecthyma is perfectly characteristic, fully developed, and furnishes an inoculable pus. It desiccates by the ninth or tenth day, and the crusts fall from the sixteenth to the twentieth day.
3. The liquid taken from the second generation of the pustules is also auto-inoculable.
4. Its activity diminishes in the successive inoculations: the power to reproduce ceases with the third or fourth generation.—*Ibid.*

AN ENDEMIC OF MORBUS BULLOSUS NEONATORUM IN THE LYING-IN HOSPITAL IN LEIPZIG.

By Dr. Ahlfeld (*Archiv für Gynaekol.*, vol. v., part i., p. 150-159.)

Coincident with a similar epidemic in the villages about Leipzig, a number of cases of this disease, which may also be called pemphigus neonatorum non-syphiliticus, occurred in the Lying-in Hospital. The eruption appeared unexpectedly on an average on the fourth day after birth, and lasted from one to fifteen days and longer; the vesicles enlarged and increased very rapidly, in a few cases with accompanying increase of temperature; their peripheries and bases were red and not sensitive; they appeared first on the neck and in the inguinal region, occasionally on the back, side, feet, &c., and spread to the hairy scalp, the face, and the abdomen. Dr. A. never saw them on the palm of the hand or on the sole of the foot. New vesicles would appear daily. The general condition of the children was good, and of the twenty-five cases none died directly from the eruption; two died from inflammation of the umbilicus, arteritis, and phlebitis, and one from furunculosis consequent to the eruption. The mothers were generally healthy; only two had a somewhat cachectic appearance. The disease, according to Dr. A., is of a contagious character; perhaps fungi are the exciting cause; it does not depend on a cachexia, and differs from real specific pemphigus besides in being comparatively innocuous.—*American Journal of Obstetrics*, Nov., 1873.

SCLERODERMA.

Dr. Arthur Van Harlingen, in a concise and well-written paper upon this subject, in the *American Journal of Syphilography and Dermatology*, October, 1873, relates a case which came under his observation, and also makes an analysis of scleroderma in general. The object of the communication is to point out the clinical features of the disease and to show its distinctive character in opposition to those views which would connect it with other affections of a more or less similar character.

The following definition is proposed :—

"Scleroderma is an affection of the skin, characterised by diffused symmetrical hardening, and generally accompanied by more or less pigmentation. Beginning in some particular locality, without febrile disturbance, swelling, or œdema, the induration spreads with greater or less rapidity over a considerable extent of surface. The affected parts fade gradually into those which remain healthy, without any distinct line of demarcation, and they are on a level with the general surface, neither raised nor depressed, and contain no tubercles or other elevations. The temperature of the affected surface is either normal or slightly depressed. The general sensibility, as well as the functions of the glands, are unaffected, save in the advanced stages of the most severe cases. It runs a chronic course, uninfluenced, or nearly so, by therapeutical applications, and has no tendency to a fatal termination.

"Pathologically, the disease consists essentially in a great increase in the fibrous elements of the corium and papillary layer, decrease of fat in the subcutaneous connective tissue, and deposit of pigment in the lower layers of the epidermis and in the rete."

This definition, Dr. Van Harlingen holds, will exclude the well-known case of Rasmussen, which has been frequently quoted as one of scleroderma, but which, it is maintained, is wanting in most of the characteristic features of scleroderma.

Scleroderma and the keloid of Addison are separated and considered as entirely distinct diseases.—*Philadelphia Med. Times*, Nov. 15.

ALEPPO BUTTON—ALEPPO EVIL—MAL D'ALEP.

BY JOHN WORTABET, M.D.

Dr. Gavin Milroy has forwarded to the *Medical Times and Gazette* some valuable observations on the curious malady called Aleppo button, which he recently received from Dr. Wortabet, of Beyrout, to whom the profession owes the excellent account of leprosy, as seen in Syria, in a late number of the *Medico-Chirurgical Review*. Dr. Milroy says it is an interesting feature of this oriental furuncular disease that it is occasionally followed by or associated with that variety of *psoriasis* which appears in circular, or rather annular, patches—a form of cutaneous eruption that is not unfrequent in the early stages of true leprous disease. Whether the patches are ever at all anæsthetic, Dr. Wortabet does not mention. That the Aleppo button is a constitutional rather than a merely local infection may be inferred from the circumstance that it seems to be more benefited by internal remedies than by external applications.

The following are the observations of Dr. Wortabet from the *Medical Times and Gazette* of the 24th ultimo :—

"This singular eruption, though occasionally met with in different parts of Syria, appears to be limited chiefly to the ancient Mesopotamia, which is watered by the Tigris and Euphrates. It seems to prevail most and to assume its severest form in those localities which are nearest to these two rivers. Thus it is much worse in Bagdad and Mosul, and even in Berejik and Aintab, than in Aleppo, which is supplied with water from a distant branch of the Euphrates. This circumstance has given rise to a strong belief among the natives that the cause of the eruption is to be found in some peculiar substance in these rivers, which enters into the constitution and produces the disease. It is also generally believed that foreigners residing in Aleppo may be saved from the eruption—or, at least, that the risk may be diminished—if they abstain from drinking the ordinary water of the city, and restrict themselves to that obtained from the wells. As no other obvious cause can be assigned, this may be the true one.

"The eruption may be single or multiple ; and these two varieties are called by the natives the *male* and the *female*. It does not appear that in the multiple form a primary sore is the direct cause of the others, for they often break out simultaneously. It is also either *benign* or *malignant*, and this independently of its being single or multiple, the cause of this difference being probably due to the constitution of the patient. It is not unlikely that the strumous diathesis is the most favourable condition for its fullest development, and that a healthy or unhealthy state of the body during the course of the eruption may exercise some modifying influence on its character and subsequent history.

"The most common seat of the Aleppo button is the face. It appears first in the form of a hard red papular elevation of the size of a small pea, and unaccompanied by much itching or pain. In a few weeks the sore breaks and forms a scab, which is hard, thick, and closely attached to the skin beneath. In some cases, and when subjected to irritation (manual or otherwise), it spreads, and at last increases from one-fourth of an inch to one or more inches in diameter. Its shape is generally circular or oval. Covered by its thick hard scab, it generally remains stationary for several months, and then begins gradually to get well. If the scab be violently removed, a red depressed ulcer is generally observed beneath it. When this heals, it always leaves behind it a well-marked cicatrix. In the malignant form it spreads, passes its general limit of time, may destroy the soft textures of the nose, and often produces a disfigurement of the lower eyelid by the contraction of the skin.

"There are certain peculiarities about the affection which are quite remarkable. The first is that it attacks invariably those who reside in or visit the localities in which it appears to be endemic. No native, and rarely ever a foreigner, escapes ; and in the latter case, even when the visit is not prolonged for more than a few weeks, perhaps for a few days only. In children born in these places the eruption generally appears during the first dentition, and rarely, if ever, after the age of puberty, attacking almost invariably the face, commonly the cheek or the angle of the mouth. The cicatrices are borne for life; and, in the case of males, the roots of the hair having been destroyed, a bald, rugged patch disfigures the face. The parts most commonly affected in adult foreigners are the wrists, ankles, and the dorsal aspects of the hands and feet. They rarely suffer from the multiple form of the affection. It is a remarkable but well-attested fact, that a foreigner may have the eruption appear many years after his visit, in some land where it is unknown. On the other hand, young children, removed from the places where the disease exists, may escape.

"It is generally believed that the Aleppo button takes about a year before it heals, hence the name of the *year pimple*, given to it by the natives. It may, however, get well in less than this period, or it may run a longer career. The general duration may be stated to be from eight to twelve months. It makes its first appearance usually in the autumn. It is not contagious. It does not attack the same person more than once; nor does it appear to be inoculable. I inoculated myself with matter from a genuine sore, with the hope of discovering a method by which the face may be saved from the disfigurement of the inevitable sore; but although the incisions became inflamed, and the whole arm to the axilla was painful for some days, the specific character of the sore was not developed, and the experiment failed. I should add, however, that, during a residence of many years in Aleppo, I never had the disease, so that there may have been something in my constitution which repelled the affection, and rendered the experiment abortive. I am sorry that I did not give it a more fair trial in young children. It is said that the disease occasionally attacks dogs, and that in these animals the eruption is generally in the nasal region.

"As regards its treatment, the natives generally leave the malady to take its own course. When it exceeds its usual time, or assumes a malignant form, they apply various empirical preparations which are supposed to be useful. Painting the sore with tincture of iodine has been strongly recommended by a medical man who saw much of the disease in its severer forms in Mosul. In my hands it has failed. The only thing I have found to be really useful is cod-liver oil taken internally. As the sore heals, it occasionally changes its specific character, and assumes a *squamous* appearance. Semi-circular patches, elevated, red, and covered with scales, group themselves around the cicatrix of the original sore, and the disease becomes almost identical with the *psoriasis annulata* of some authors. This is perhaps the worst form in which the Aleppo button terminates; for in this condition it is not only extremely chronic, running on for years, but, as it heals and spreads from the centre towards the circumference, it leaves a constantly enlarging cicatrix. The disfigurement of the face thus produced is very distressing, especially when the subject is a female.

"The internal use of arsenic, cod-liver oil, and iron has failed altogether; and so have the most approved external remedies. The application of caustics—chiefly the solid nitrate of silver and acetic acid—always reduced the elevated patches to the level of the skin, and destroyed for a time the formation of scales; but, although I have persisted in this treatment for months, the disease has not been permanently cured."

ABOUT BOOKS.

Life on the Gold Coast. By C. A. Gordon, C.B., M.D., Deputy Surgeon-General. London: Baillière, Tindall, and Cox. 1874.

We rise from perusal of this work with feelings of admiration for the author, who places before his readers the most effective sketch of life on the Gold Coast it has been our lot to meet with in the literature called forth by the Ashantee war.

Surgeon-General Gordon is well known by his professional writings, which do honour to the Army Medical Deparment. Here we have him in a slightly different character—nearly divested of his professional status, and coming before us simply as an author. He undertakes to give us some account of "Life on the Gold Coast," and he presents us with a vivid picture of the scene as witnessed during his own residence there. It is impossible to read it without feeling a personal interest in the welfare of the Europeans who formed the residents there when the author was among them, and much of this interest is transferred to those of our countrymen now on the Coast. But, besides this, we gain from Dr. Gordon's book distinct ideas of the Ashantees, Fantees, Houssas, Kroomen, and other inhabitants of Western Africa. Their peculiarities, personal and national, their manners and customs, their social and religious observances, their beliefs, superstitions, and ideas all pass before us in due order, showing that they have been closely observed by a well-trained mind and described with the simplicity that best conveys the writer's ideas. Not only the people, but the country, its scenery, produce, vegetation, and fauna are also brought before the reader, until we feel positive wonder at the extent of the information crowded into these pages. The author must possess that invaluable quality of the physician—an observant mind—in the highest degree, and we might congratulate a professed naturalist on the descriptions of his rambles, and what he saw in them. This is perhaps the more surprising, inasmuch as the book has evidently been brought out unexpectedly. It has evidently been put together rapidly, to meet the call for information about the country where our gallant bands are now engaged, their enemies, and their allies. If possible, the slight marks of haste in the style that convince of this add to the interest excited by the book, and impress the reader with the truthfulness of the author, while the author has wisely embodied in it the story of the expedition against Apollonia, as written in his diary at the time, and which tells, in a most effective way, the nature of the difficulties encountered in such undertakings as that with which our countrymen are at this very time contending.

How to Preserve Health on the Gold Coast. By Henry MacCormac, M.D. London: Longmans, Green & Co

Dr. MacCormac has published in pamphlet form a series of interesting letters on "How to Preserve Health on the

Gold Coast, with Reminiscences of the Climate and Country." At the present time, when so much attention is directed to the Gold Coast, it is well that men of large experience should give their views on what ought and ought not to be done in Africa. We take the following extract from his pamphlet :—

> "The fulness of habit which Europeans, and particularly young men, often bring with them to the tropics I look upon as highly prejudicial. I am no advocate for starvation, or for total abstinence either, but if those who visit regions so very different in certain respects from our own were to practise greater circumspection, and limit their food and drink supplies to what was strictly necessary, it would save many lives. Constipation of the intestines is apt to afflict new comers in Africa. This is to be avoided, or the consequences may prove prejudicial. Slight casual diarrhœa is readily checked by dilute sulphuric acid. Vessels approaching the coast of Africa should be provided with awnings. Sailors, when it can be avoided, should not be suffered to go on shore, else drunkenness and fever are pretty certain to ensue. The troops and civilians engaged should, for many reasons and as quickly as possible, in fact at once on landing, be removed up from the coast. The early morning, but not too early, *and only after a light warm meal,* is the best time for locomotion. Morning-tide is infinitely better than midday, and very much better than the cool of the evening. The impression that exercise, I mean reasonable exercise, should not be taken in warm climates, is merely a premium on liver disease. Idleness and inaction, indeed, are baneful in warm climates as in cold.
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> "*Cæteris paribus,* and speaking of intertropical Africa, the interior country is usually much more healthy than the coast, and the dry uplands than are the banks of rivers."

Manual of Lunacy: a Handbook relating to the Legal Care and Treatment of the Insane. By Lyttleton S. Winslow, M.B., M.L. Cantab., M.R.C.P. Lond., D.C.L. Oxon. London: Smith, Elder and Co. 1874.

This manual will supply a want long felt. Those who occasionally undertake the care of insane patients not unfrequently expose themselves to serious annoyance by omitting to comply with all the regulations laid down by law. Anyone taking Dr. Winslow's book as his guide would avoid such errors. Again, every practitioner is liable at any time to be requested to certify respecting a case of lunacy, or to advise a patient's friends as to the best course to be pursued. We are aware that many practitioners feel at a loss how to proceed under such circumstances. In the work before us they will find full and accurate instructions. The author appears to have bestowed great labour in compiling the facts and observations, and we believe the work will be useful to all persons concerned with the insane, directly or indirectly. The information is not confined to the laws and institutions of this country, but comprises much respecting those of the Continent and America, and the book is the most complete manual of lunacy extant. The information from abroad has been supplied by distinguished alienists of the several countries, and is acknowledged in the preface, which is penned as a sort of introduction by the author's father, Dr. Forbes Winslow, who tells us that his son has resided for several years in his establishment, and taken an active part in its management. This is an additional guarantee that the work is practical, and we can testify that it evinces extensive acquaintance with the literature and laws of lunacy. The appendices give good digests of the most important Acts of Parliament, and the forms that medical men may be called upon to sign, and there is a full index to the volume, so that it is easy to refer at once to any point and see what may or may not be done in any case of lunacy.

The Simplicity of Life. By Ralph Richardson, M.A., M.D. London: H. K. Lewis. 1873.

The work before us treats of the "Simplicity of Life" in contra-distinction to the elaborate theories of various authors. The author believes that "had Professor Huxley, Sir W. Gull, Dr. Lionel Beale, and Mayer used the words, life, vitality, force, power, and organisation, in the sense they are used by grammarians and logicians, they would have come much more nearly to an agreement with Brown and Fletcher." Brown's theory was, that life consisted in the "sum of the actions of organised beings," which view in 1826 was enforced by Fletcher, who published a Physiology ten years later, in 1836, and our author edits it, so to speak, with copious and valuable notes, whilst in an appendix we have interesting tables, showing much research on the causes and remedies of those diseases which are not material, and therefore cannot produce their effects by being absorbed by the vessels of the body. The book is well got up, as regards printing, paper, and binding, and we have no doubt that it will have a ready sale.

On Lupus Disease of the Skin and its Treatment by a New Method. By Balmanno Squire, M.B. London: J. & A. Churchill.

Mr. Squire's treatment of lupus is chiefly local. He first tries the tincture of iodine, and then, if in the course of a few minutes it fails to produce any sensation of smarting he at once applies a solution of the strength of the liquor iodi of the Pharmacopœia, but made with spirit instead of water, and if this also fails of effect he then uses the liniment of iodine (p. 28).

The Visiting List for 1874. London: John Smith and Co.

This is the twenty-eighth year of this useful pocket annual. We intended to notice it last month, but omitted to do so. We have used it daily since, as we have for several years, and we find it ample for all purposes. We therefore again commend it.

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SYPHILITIC DISEASES OF THE NERVOUS SYSTEM.

The Lettsomian Lectures this year are being delivered before the Medical Society of London by Dr. Broadbent, who has selected as his subject "Syphilitic Affections of the Nervous System." We give an abstract :—

Lecture I.

In the first lecture syphilis was considered as a cause of disease in the nervous system—the stages and forms in which the nervous system is implicated, the pathology of the disease, the parts affected viz., brain, cord, and nerves, and instances were given of the last, in which neuralgia and local paralysis occur.

The following tables of secondary and tertiary manifestations, drawn up by Mr. Lane, were exhibited :—

Table I.—*Morbid Changes observed in Secondary Syphilis.*

Affections of Skin.	Erythematous—Roseola ; Popular—Lichen ; Tubercular—Tubercles that may desquamate, ulcerate, or encrust ; Scaly—Psoriasis, Lepra ; Pustular—Ecthyma.
Affections of Mucous and Semi-Mucous Membranes.	Superficial white aphthous-looking Ulcers on the tonsils, soft palate and fauces ; Superficial Ulcers on the sides of the tongue and angles of the mouth ; Mucous Tubercles, or Condylomata, on semi-mucous surfaces ; Deep excavated Ulcers of tonsils
	Iritis ; Muscular Pains ; Arthritic Pains ; Pains in bones ; Periostitis ; Nodes

The above table contains the principal affections of constitutional syphilis, termed secondary, in which the venereal poison still exists, and may therefore be communicated by cohabitation and transmitted to the offspring, and in which mercury is beneficial and iodine of but little or no service.

Table II.—*Pathological Conditions in Tertiary Syphilis, Syphilitic Cachexia, or Sequelæ of Syphilis.*

Inflammation of Fibrous Membranes.	Pesiostitis, resulting in nodes ; Caries and necrosis of bone ; Affecting fibrous tissues of joints—Arthritis ; Fibrous tissues of testicle—Orchitis ; Fibrous tissues of globe of eye —Sclerotitis.
Affections of Skin and Mucous Membranes.	Rupia ; Cachectic ulcers of skin ; Rapid ulceration and sloughing of the soft palate, fauces, pharynx, larynx, rectum, vagina, nymphæ, and labia.
Deposits of Fibro-plastic Lymph imperfectly organised.	In the areolar tissue (subcutaneous or submucous tubercles) ; In muscular tissue, more frequently met with in the tongue, and occasionally in other muscles ; Also met with as post-mortem appearances in the liver, spleen, kidneys, lungs, and other viscera.
Lardaceous and Waxy Deposits.	Occasionally found in the post-mortem examination of the bodies of persons of dissipated habits.

In the above table are classed the pathological changes which occasionally present themselves in patients who have passed through the primary and secondary stages of syphilis, but in whom the venereal poison no longer exists, and cannot therefore be transmitted.

The remedies required in these affections are especially iodine and sarsaparilla, and mercury is injurious.

Dr. Broadbent seemed to adopt the theory of Mr. Jonathan Hutchinson, which brings syphilis into the class of continued eruptive fevers.

According to this, the secondary stage of syphilis represents the fever, the tertiary stage, so-called, the effects produced upon the solids and liquids of the organism by the febrile process. The tertiary stage thus becomes, not a part of the disease itself, but a consequence of it, corresponding to the sequelæ of fevers, such as dropsy following scarlatina, or scrofulous affections after measles.

Both syphilis and fevers have, in common, a period of incubation, a febrile stage which runs a more or less definite course, more regular and more definite in the acute and short fevers, such as scarlatina and measles ; less regular and definite in those which have a longer duration, as enteric fever ; and correspondingly more irregular and indefinite in syphilis, which is essentially chronic.

In the febrile stage, which is attended with symmetrical cutaneous manifestations and disseminated lesions in internal organs, the poison is reproduced in the system, and the individual who is the subject of the disease becomes a source of contagion. Finally, one atttack usually confers future immunity from the disease.

Now, just as in fevers, we may have pneumonia or meningitis not distinguishable by any anatomical characters from pneumonia or meningitis due to other causes, and recognised clinically by the supervention of symptoms of these conditions upon those of the fever ; so, in the secondary stage of syphilis, there may occur spinal or cerebral congestions and inflammations which have no peculiarities to indicate the syphilitic character of the affection ; and this has to be ascertained almost entirely from previous history or from existing manifestations of syphilis.

In tertiary syphilis, on the other hand, the morbid processes set up are altogether peculiar, and the symptoms are often sufficient of themselves to establish the nature of the case in the absence of collateral evidence.

Dr. Broadbent is of opinion that it is chiefly in persons in whom the secondary affections have been transient and insignificant, or even absent, or in those in whom the tertiaries arrive early or primarily, that the nervous system is liable to suffer. He is corroborated in this view by the statements of Gross, Lancereaux, Braus, Buzzard, Moxon, and other writers, and it is scarcely possible otherwise to explain the entire absence of syphilitic history in many cases obviously of a syphilitic character. But this is exactly what we see in the case of other tertiary manifestations. We are almost daily called upon to make a diagnosis of syphilis in the absence of a history, and in the face of positive assertions that the patient has never been subjected to any syphilitic infection, or suffered from any specific manifestations. In the case of women, and especially of wives, this is not to be wondered at. They are often absolutely ignorant that they have contracted the disease.

Dr. Broadbent having quoted the descriptions of Wilks and Moxon from " Guy's Hospital Reports," proceeded to consider the effects of syphilitic disease on the nerves, on the spinal cord, and on the different parts of the encephalon.

SYPHILITIC AFFECTIONS OF NERVES.

First, then, syphilitic affections of the nerves comprise the neuralgias and the local paralyses. Pure neuralgias he did not think very common ; they do not differ materially from the ordinary forms of neuralgia. The cervico-occipital, the cervico-brachial, the sciatic, and some of the visceral nerves, have been found to be affected much in the same proportion as when no specific influence is in operation ; and Dr. Anstie has given a clue to the occurrence of neuralgia in syphilis, which is that the subjects are constitutionally neurotic, and syphilis is one among the many causes which may bring out the tendency. It is more common in the secondary than in the tertiary stage, and may even precede the first cutaneous eruption. If recognised, the most successful treatment will be that appropriate for the stage of syphilis in which they occur. Sometimes the treatment of neuralgia as such will succeed, as we sometimes see in other cases in which neuralgia is suppressed, in spite of the continued existence of an exciting cause, by operating against the predisposing condition of the system. A form of nerve pain, differing from the ordinary neuralgia, more dull, aching, and continuous, may be caused in the tertiary stage by neuromata (very rare), by pressure from a node or gummatous tumours, or by conditions giving rise to sensory and motor paralysis.

We may have local paralysis or syphilitic affections of every cranial or spinal nerve. With the exception of a transient loss of power sometimes seen in the ocular muscles, paralysis of individual nerves is almost invariably a tertiary phenomenon. It may be produced in various ways by a neuroma, by the inclusion of the nerve in a gummatous tumour—a very rare occurrence—but usually the question of causation lies between periostitis about the orifice or exit of the nerve, the cranium, and the spinal canal, and meningeal exudation, involving the nerve during the intracranial or intraspinal part of its course. The latter is by far the most common cause. Any points of the cranial nerves may be paralysed from the consequences of syphilitic disease; but some much more commonly than others. Vision may be impaired or lost in consequence of syphilitic inflammation of the choroid coat or retina, or from double optic neuritis, consequent upon a syphilitic tumour in any part of the brain, or from pressure upon the optic tract. Deafness, again, which is connected with syphilis, may be due to affections of the auditory mechanism or the auditory nerve. Leaving these out of the question, then, the cranial nerve most frequently affected is the third. Sometimes the only result is mydriasis, from loss of accommodation or dilatation of the pupil, or ptosis of the eyelid; but more commonly the entire nerve suffers, and, in addition to the ptosis and dilatation of the pupil, we have external strabismus and immobility of the globe of the eye. The two-fold fact that the third nerve is the most frequently affected and often the only nerve paralysed, and again, that portions of the nerve may suffer before the others, is explained by the habit of locality of syphilitic exudation, of which the interpeduncular space at the base of the brain traversed by the third nerve on its way to the cavernous sinus is the favourite seat, and it is conclusive evidence that paralysis is not due to the periostitis at the orifice of exit. The nerve also has been found compressed by a gummatous tumour of the sella turcica of the sphenoid bone, and an example was referred to in which both nerves were affected. Paralysis of the sixth, the evidence of which is internal strabismus, is, perhaps, next in frequency. Paralysis of the fourth, the remaining motor nerve of the eye, is not common; it is shown by double vision without an obvious squint, the two images being obliquely placed with respect to each other, and receding when the patient looks down, since this brings the superior oblique muscle into action and approximating each other, and finally equalised as the eyes are raised, so that vision is single when the patient looks up. Paralysis of the seventh, like oculo-motor paralysis, is more frequently caused by pathological conditions which are not of syphilitic origin. The features which it presents are too familiar to need enumeration, as also those of paralysis of the fifth. Paralysis of the ninth may be seen of course in the tongue, and the sterno-hyoid and thyroid muscles; and of the eighth in difficulty of deglutition.

The remainder of the first lecture consisted of the histories of a series of cases of syphilitic diseases of the nerves.

LECTURE II.

AFFECTIONS OF THE SPINE.

THE range of symptoms producible by disease of the cord is not very wide. The tendency of most is to paraplegia; and to understand this we have only to remember that in some parts the cord is not thicker than the little finger, and that consequently a limited area of inflammation or a small tumour might involve a complete segment, which is all that is required to cut off the parts below from the volitional centres in the brain, and produce this form of paralysis.

Paraplegia is rather common as a result of syphilis (Bazin says that two-thirds of the cases are syphilitic), and if taken early and treated energetically it is usually curable. It is therefore very desirable that, if possible, distinguishing features of syphilitic paraplegia should be pointed out.

It has been given as one of the characters of syphilitic paralysis generally, and of syphilitic paraplegia, that sensation is usually not impaired, and that reflex action persists; but this, if it were true as a matter of fact, which is not the case, would not constitute a peculiarity. It is the rule in any form of disease of the nervous system that the motor functions are more easily affected than the sensory. Even in nerves in which motor and sensory fibres are mixed up together, an injury, such as pressure, may destroy for some time the conductibility for motor impulses, while the only effect on the sensory functions is a temporary dysæsthesia. In experimenting on the cord this difference has been found to be even more marked; division of the white fibres constituting the motor tract being followed by distinct and definite motor paralysis; while in the case of the central grey matter, which is the channel for sensations, a slight bridge suffices to convey upwards the sensory impressions, and while there is any continuity of grey matter anæsthesia is not produced. It is again the rule in hemiplegia from cerebral lesion that motion is more frequently and persistently impaired than sensation.

Myelitis—inflammation of the substance of the cord, if general, gives rise to a progressive loss of motor power from below upwards, with loss of sensation, preceded by tingling, the rectum and bladder and their sphincters sharing in the paralysis. There is little pain, at most a dull aching. Reflex action is abolished, and death occurs when the inflammation extends to the respiratory centres. Bedsores come on early.

A local myelitis, involving a segment of the cord, causes paralysis of the parts below, motor and sensory (or motor only for a time), with loss of control over the evacuations. Reflex action will persist, and may be exaggerated from concentration on the motor cells of the anterior nerve-roots of impressions which normally would have been partly transmitted upwards to the brain, and the paralysed limbs often start involuntarily. If there be pain it is usually due, not to the myelitis, but to some extraneous cause—as, for example, disease of the vertebræ.

Spinal meningitis is attended with pain both along the spine and in the limbs, provoked by movements, especially such as involve motion of the spinal column. There are painful startings, or tonic contractions of the limbs or muscles of the trunk, and sometimes severe tetanoid spasms; sensibility is usually intensified. Paraplegia comes on late, and gradually if at all. There is loss of power in the bladder; not usually in the rectum.

Spinal congestion, according to Dr. Radcliffe, gives rise to sudden incomplete paraplegia, varying in degree, without loss of sensation or of control over the evacuations, but attended with aching in the back and limbs; but there may be a rapidly-progressive fatal paraplegia which leaves only traces of congestion.

Other diseases are, sclerosis of the posterior columns and cornua, and of the anterior white columns and cornua, the former giving rise to locomotor ataxy, the latter to wasting palsy.

There may again be softening of the cord, which, if non-inflammatory, is not to be distinguished from local chronic myelitis; or it may be the seat of tumours.

Syphilis may give rise to myelitis or meningitis, or to the small gummata or local scleroses described by Dr. Moxon; but, before speaking of these, the question of the dependence of locomotor ataxy on syphilis may be considered.

It has been stated that locomotor ataxy is a form of disease often set up in the cord by syphilis, but Dr. Broadbent finds no support for this view in recorded cases; and it is not the habit of syphilitic disease to follow in its advance any functional or structural arrangement in the part affected, or confine itself to a particular vascular area.

Dr. Broadbent thinks there is still less reason to attribute atrophic paralysis to syphilis than locomotor ataxy.

Coming then to myelitis—the form most frequently seen in syphilis is subacute or chronic inflammation of a segment of the cord; but, in his opinion, acute, general, or local myelitis may be caused by syphilis, especially in the secondary stage. This is a point which cannot easily be proved. There is nothing peculiar in acute myelitis to indicate its cause; and, the disease being rare, it must be long before a sufficient number of cases can be collected in which it is associated with syphilis, even by observers alive to the possibility; while in the secondary stage a post-mortem diagnosis cannot be made so readily as in the tertiary period of the disease.

In 1859 Dr. B. saw, in quick succession, two cases—one in the Hôpital du Midi, under Ricord, the other under Trousseau in the Hôtel-Dieu—of rapidly progressing paraplegia terminating fatally. In both there was general and advanced inflammation and softening of the spinal cord. Both the patients were young, and suffering from secondary syphilis in an early stage. Ricord, with characteristic caution, refused to pronounce the myelitis syhilitic, though it was not the first case of the kind he had seen in his wards. Trousseau was more disposed to consider syphilis as the cause of the inflammation.

Of acute local myelitis Dr. Broadbent gave a case in which also the disease of the cord came on in the secondary period.

The paraplegia generally produced by syphilis is the result of disease slowly invading a segment of the spinal cord.

The course of symptoms is such as might result either from a limited chronic myelitis, or from softening, or from tumour.

The age at which syphilitic paraplegia occurs—namely, in early adult life or early middle age—excludes degenerative non-inflammatory softening.

Embolic softening, the lecturer thinks, only occurs in connection with a very general distribution of emboli, as in acute fatal chorea or as in ulcerative endocarditis, when the effects produced elsewhere predominate.

The absence of angular spinal curvature and of the symptoms which disease of the bones or cartilages of the vertebral column produces before the cord is affected, excludes the most frequent cause of local myelitis not depending on syphilis, and we are left to decide from the history or from collateral circumstances between syphilis and rheumatism or exposure to wet and cold or injury.

In syphilis the condition present is probably a small gumma around which inflammatory softening is set up, and this explains the slow, halting, and unequal progress of the paralysis.

Conversely, paraplegia, at first slight, remaining long at a given point or advancing very slowly, then suddenly worse, mending a little again, perhaps spontaneously, or at least without specific treatment, but again increasing, and so pursuing its course to absolute loss of sensation and motion, while reflex action persists, should excite a suspicion of syphilitic mischief, and should lead to energetic treatment, whether corroborative evidence is forthcoming or not.

While it was still uncertain whether syphilis could give rise to disease of the nervous system, and the purpose of inquiry was to establish a fact in medical science, no caution could be too great in accepting evidence on the point; but the fact of causation once established, we are justified in going in advance of positive knowledge in our treatment.

SYPHILITIC AFFECTIONS OF THE MEDULLA OBLONGATA AND PONS.

The intercranial prolongation of the spinal cord forming the medulla oblongata and pons Varolii is complicated in its structure and function, not only by the separation of the nerve nuclei from each other in accordance with the specialisation of their functions, but by the change in the relations of the gray matter and tracts of white fibres with each other, the decussation of the motor tracts, and the connection of the cerebellum with the spinal axis which is here effected. The consequences of lesions here, therefore, are more varied, and the causes which may give rise to them are increased in number; these parts, for example, may be affected by disease in the cerebellum or by aneurism of the basilar artery. The increased dimensions of the spinal axis, moreover, permit of unilateral limitation of a morbid change; and this is not uncommon, although the two halves are fused together; while unilateral mischief is rarely seen in the cord, which is almost completely divided longitudinally by the fissures. Possibly, however, the vascular membrane which dips into the fissures is more efficient in communicating a morbid change than nervous structure. The general results of disease in the medulla and pons are, some interference with the sensory or motor tract, proceeding from the cord to the sensori-motor ganglia, together with disturbances or abolition of the function of one or more of the nerve-nuclei. It is seldom that we can come to the conclusion that there is disease here from sensory or motor paralysis of the limbs alone, or from affections of the nerves which have their origin in the intracranial part of the spinal axis alone, although this may be done occasionally when two nerves are simultaneously paralysed the nuclei of which are conjoined or in close proximity, while the nerves take a different course after their emergence from the centre, as in the case of the sixth and seventh. The grouping of symptoms arising from the inclusion in a diseased area of several nerve nuclei may be very varied. Usually the symptoms afford the means of making a very precise localisation of the lesion by the application of anatomical and physiological knowledge. Of course, disease here is attended with great danger to life, the slightest interference with the reflex centres of the respiratory or cardiac movements being fatal. Sudden death, therefore, is common. The nature of the morbid change will be arrived at by considerations such as those made use of in determining the probable cause of paraplegia. A slow but irregular progress of the affection will favour the hypothesis of syphilis, but the morbid changes resulting from syphilis do not specially affect the surface of the medulla and pons, according to Dr. Moxon's dictum, but rather the substance. The progressive labio-glosso-laryngeal paralysis, which is the counterpart of locomotor ataxy, is not syphilitic; but it is quite possible for syphilitic change to involve the same parts of the medulla and give rise to analogous or even identical symptoms. The course of the disease will, however, be different.

SYPHILITIC AFFECTIONS OF THE CEREBELLUM.

The symptomatology of disease of the cerebellum is singularly obscure, corresponding, however, in this respect with the state of our knowledge of the physiology of this nervous centre.

Dr. B. adheres to the theory of its action which makes it the seat of the higher and more complex co-ordinations of movements. It is not the sole organ of muscular co-ordination, as was at first inferred from the experiment of Flourens. The spinal cord co-ordinates in a distinctly purposive manner movements which respond to tactile or other cutaneous impressions, but when movements have to be guided by vision, some special and more complex apparatus is needed to bring muscular actions into relation with visual impressions, which are so far removed in character from tactile impressions (the immediate guides of muscular actions), and are correlated with them only by inference and experience. This is essentially, though in a superficial and imperfect way, the view held by Mr. Herbert Spencer, and repeatedly expounded and illustrated by Dr. Hughlings Jackson—namely, that the cerebellum is to space relations what the cerebrum is to time relations. Dr. Ferrier's interesting experiments, which appear to make of the cerebellum simply a motor centre for the movements of the eyes, receive no support from the facts of pathology, and his results will probably find some interpretation more consistent with these (a). As in the cerebral hemispheres, so in the cerebellum, there may be extensive disease without obvious symptoms, or the symptoms may be such as will indicate only the existence of intracranial mischief, but afford no indication whatever of the seat of the lesion—viz., pain in the head, vomiting, and blindness; pain, however, being more constant as an accompaniment of cerebellar than of cerebral disease. The special symptoms of disease of the cerebellum, when such exist, are a peculiar staggering gait and a vague, purposeless character of the movements generally, together with a marked loss of vigour and energy. A want of control and co-ordination of muscular actions is evident, but it differs from that due to loss of spinal co-ordination, and it is not increased by closing the eyes. In the latter stages, evidences of pressure upon the medulla, or of general intracranial pressure, may be superadded, due to effusion into the cerebral ventricles.

Several cases were carefully detailed in this second lecture.

LECTURE III.

The third and concluding lecture of the series will be delivered on the evening of the 2nd proximo, when the affections of the brain will be considered.

AT THE SOCIETIES.

Pacatior philosophorum oratio, oratorum pugnacior—CIC.

AT THE ROYAL MEDICAL AND CHIRURGICAL SOCIETY,

ON TUESDAY, JANUARY 13TH, 1874,

DR. C. J. B. WILLIAMS, F.R.S., President, in the Chair,

F. LE GROS CLARK, F.R.S., brought before the Society a case of

LARGE ADENOCELE, COMPLICATED WITH MILK CYST.

E. H——, æt. 24, married, was admitted into St. Thomas's Hospital in November, 1872. At the age of sixteen she first noticed a swelling in the breast, which had gradually increased to its present large dimensions, but unattended by pain. She had been married two years, and had an infant seven months old. The bulk of the tumour was below the nipple, and the entire mass measured twenty-six inches and a half in circumference. It was removed on Dec. 4th, and the true gland, being almost entirely distinct, was only partially removed with it. The patient made a good recovery. The solid tumour weighed between eight and nine pounds, and proved to be adenoid growth, resembling, on section, the structure of healthy breast-tissue. In its interior was a large cavity, containing about two pints of thick, creamy milk. Its lining membrane was ragged and fibrinous. Its microscopic characters were those of true gland-tissue. The patient has been again recently confined, and suffered only temporary inconvenience at the early period of lactation.

DISLOCATIONS OF THE FIRST AND SECOND PIECES OF THE STERNUM.

By WALTER RIVINGTON, M.S. Lond., F.R.C.S,
Surgeon to the London Hospital.

The object of the paper was to give an explanation of the mode of occurrence of dislocations of the sternum, illustrated by cases coming under observation at the London Hospital; and to account for their peculiarities by the anatomy of the superior sternal articulation. That dislocations and fractures of the sternum might be produced by direct or indirect violence, and that they frequently complicated fractures and dislocations of the spine, were well-recognised facts; but as to the mode of their occurrence, both conflicting and indefinite explanations had been offered. Of fourteen cases collected by Mr. Poland, the displacement was due or was attributed in four, to force applied immediately to the sternum; in one, to violent lateral compression of the chest; in one, to muscular action; in one, to flexion of the body forwards as the result of a fall; in three, to falls from a height on to the back; in two, to falls from a height, the part struck not being mentioned: whilst in one, the cause was not stated. Precisely similar causes had been assigned to fractures of the sternum, and the two classes of injury had so much in common that some writers included displacements of the sternum under the head of fractures. In the large majority of cases of both, the upper fragment was found lying behind the lower. In displacements, for instance, the manubrium was almost invariably found lying behind the gladiolus, the second pair of ribs remaining attached to the manubrium, and the strong posterior layer of periosteum untorn, but stripped up from the bone, holding the two segments together. The only recorded exception to this disposition of the segments known to the author was a case recorded by Sabatier. The position of the manubrium behind the gladiolus had been generally attributed to the direct force of the blow, pushing it backwards; but the same effect might be produced, in all probability, by force applied to the body of the sternum, the elasticity of the ribs and costal cartilages attached to it causing it to rebound after it had been depressed. This was M. Maisonneuve's suggestion, and it appeared the more probable because the gladiolus was more exposed to violence. The question might arise whether a particular fracture or displacement had been the result of direct or indirect force. The injuries to the sternum, for instance, which complicated fractures and displacements, were often attributed by some surgeons to a violent descent of the chin on to the bone, and often explained by others as the effect of counter-stroke; others, again, regarded them as the result of a doubling forwards of the sternum, caused by forcible flexion of the spine. That violent descent of the chin on to the sternum might occasion *fracture* was both *à priori* probable and was supported by the records of cases. The author quoted a case which had occurred in the practice of his colleague, Mr. Couper, at the London Hospital, as one apparently of this nature. An acrobat of thirty, in turning a double somersault, fell about ten feet on to the back of his head. He came down on some tan, and his head was violently flexed on to his chest. The injury caused a separation between the sixth and seventh cervical vertebræ and an oblique fracture of the sternum, such as might have been produced by the chin inclined to one side. The author believed that the descent of the chin on to the sternum was far more likely to occasion a fracture than a dislocation, and that it was only in cases of disruption of the ligaments uniting two of the cervical vertebræ, by which a freer flexion of the head could be effected, that this cause came into operation. Neither Mr. Poland nor Mr. Hamilton mentioned it, and certainly it had been used to explain cases due to forcible flexion and extension of the dorsal spine.

Two cases were then related by the author in exemplification of the influence of forcible flexion and extension of the dorsal spine on the sternum, in both of which the injury had been attributed by some to the patient's chin. In the first case a man, æt. 37, was walking in the street when some scaffolding fell on his head. The vertical force thus applied caused fracture and crushing of the third dorsal vertebra, and the violent flexion of the dorsal vertebræ, acting through the medium of the ribs, produced disruption of the ligaments uniting the manubrium and gladiolus. In the second case a man, æt. 55, was standing on the floor of a warehouse, when a bag of seeds, falling from a height, alighted on his back between the scapulæ, fracturing the six upper ribs on the left side near their angles, breaking off the spinous processes of the six upper dorsal vertebræ, and fracturing the body of the sixth dorsal vertebra. The dorsal spine was thus violently extended, the shock was conveyed through the ribs to the sternum, but, owing to the greater length and leverage of the five lower true ribs, more powerfully to the gladiolus than to the manubrium, and hence the occurrence of a dislocation of the two segments. This driving forwards of the gladiolus, either separately or more powerfully than the manubrium, which was held firmly by the first pair of ribs, would appear to be the correct explanation of some recorded cases explained in a different manner, as, for example, by muscular action, such as fractures or displacements from simple falls on the back, or from falls in which the back strikes against a prominent object, or falls on to the feet and nates, the body finally falling over on to the back. The lever-like action of the ribs came into play during compression of the chest, and in cases in which the force was applied unilaterally as well as in overarching of the back by violent contraction of the muscles during the expulsive efforts of labour.

(a) The lecturer does not appear to be aware that Ferrier's results have already been attributed by able observers to an imperfect method of experiment.—ED. DOCTOR.

The frequency and pathological peculiarities of dislocations were fully explained by the anatomy of the articulation. Although the English anatomical text-books merely stated that the manubrium and gladiolus were united by a single piece of symphisial cartilage, there were in reality two distinct kinds of joint found between them—the amphiarthrodial and the diarthrodial. Having noticed this in examining specimens in the post-mortem room at the London Hospital, the author turned to the authorities, and, finding no mention of the fact in English books, consulted a French "Anatomy" by M. Jamain, in which M. Maisonneuve's researches were epitomised. Thirty years ago M. Maisonneuve had fully described the two kinds of joint in a paper on "Luxations of the Sternum," published in the *Archives Générales de Médecine* (serie iii., tome xiv.). In the amphiarthrodial joint there was a single piece of true fibro-cartilage uniting the segments, more thin and friable in the centre than at the periphery. In the diarthrodial each bone was clothed with a distinct lamina of cartilage, adherent on one side, free on the other; and the cartilage belonging to the gladiolus was continued without interruption on to the facets for the cartilages of the second ribs. The spur of the second costal cartilage was joined to the manubrial layer, thus shutting out the articulation formed between the upper facet on the second costal cartilage and the manubrium from the true sternal joint, whilst the lower chondro-sternal articulation was continuous with it. These anatomical peculiarities explained the adhesion of the second costal cartilages to the manubrium in dislocations, and the presence of a distinct layer of cartilage on the end of each segment. M. Maisonneuve's accurate description of the layers of periosteum clothing the anterior and posterior aspects of the sternum was quoted. The anterior coat was described by him as thicker than the posterior, strongly adherent to the bones, and forming a sort of felt possessing a great power of resistance, especially in the transverse direction, whilst the posterior layer was composed of longitudinal fibres, adhering but slightly to the chondro-sternal articulations. As the force of injuries generally acted from behind forwards through the ribs, and as the sternum forms an arch with its highest point at or near the junction of the manubrium and gladiolus, the greatest strain usually fell on the anterior ligaments, and when the segments had been separated by the rupture of these ligaments, the gladiolus was carried forwards and upwards in front of the manubrium, and the end of the latter becoming inserted like a wedge between the posterior layer of periosteum and the body of the sternum, that layer was stripped up from the bone as far as, but no further than, the level of the third pair of ribs. Violence applied to the sternum in front, and occasioning fracture, caused the ends of the bone to be bent inwards, rupturing the posterior ligament, but not generally tearing the anterior layer.

The author differed from some of M. Maisonneuve's conclusions. M. Maisonneuve, without stating the number of his observations, placed the proportion of diarthrodial to amphiarthrodial joints as high as three out of five, and found the diarthrodial joint more often in females than males. In children the diarthrodial joint was rare. The author's observations showed a preponderance of the amphiarthrodial joint and the greater frequency of the diarthrodial form in males than females. Out of 100 fresh sterna examined by him, 51 were amphiarthrodial, 6 ossified, 32 diarthrodial, and 11 of a mixed nature, the separation between the segments being incomplete. The diarthrodial joint was met with at all ages, and in very old people without a trace of ossification. The author had found it in old people between seventy and eighty years of age. On the other hand, the amphiarthrodial form was subject to ossification at a comparatively early age. The author had seen ossification at thirty-four and thirty-six years of age. He believed that the diarthrodial joint was formed by absorption after puberty.

M. Maisonneuve had ascribed to the clavicles great influence in causing dislocation of the manubrium, because fracture of the clavicle was often found accompanying the injury. The author attributed far more influence to the first and second pairs of ribs, which were united to the manubrium much less movably than the clavicle, and must exercise more power over it both in forcible flexion and extension of the dorsal spine, and in cases in which the violence is applied unilaterally. If a fresh specimen be examined in which the diarthrodial joint exists, or in which there is a tolerably thick symphysial cartilage, it will be found that, in addition to gliding movements forwards and backwards (varying much in degree in different specimens), some rotary motion is obtainable. This must favour displacement from unilateral violence; and it seems obvious that the first and second ribs must be chiefly concerned in giving the necessary twist to the manubrium. Two cases were referred to in illustration of these views. A man, æt. 45, fell from a plank about fifteen feet to the ground on to his back, the two upper dorsal vertebræ coming in contact with a piece of timber a foot square. Great pain was experienced at the upper sternal joint, and tenderness on pressure remained for several days, showing that the joint had been severely strained, although the force conveyed by the second ribs had been insufficient to occasion a dislocation. A man, æt. 36, fell off a gate on to the back of his head and neck, the lower part of the neck coming into contact with a large stone. The fifth and sixth cervical vertebræ were separated, and the first left rib was separated from the manubrium. On examining the sternum it was found unusually thick, with the upper joint completely ossified. Under ordinary circumstances the force conveyed along the rib would have caused a dislocation or fracture of the sternum; but, owing to the unusual strength of the bone, the rib became separated instead.

A *résumé* of the main points concluded the paper, which was illustrated by specimens showing the two different kinds of joint and the effects of dislocation.

AT THE MEDICAL SOCIETY OF LONDON,

On December 22, 1873,

Dr. S. O. Habershon, F.R.C.P., President, in the Chair,

Dr. Dowse read a paper on

CEREBRO-SPINAL MENINGITIS,

first drawing attention to the historical fact that Morgagni was the first physician to diagnose and define the symptoms of inflammation of the brain and its membranes. He then went on to speak of the epidemics of cerebro-spinal meningitis or "spotted fever," more particularly the one which occurred at Dantzic in 1864, but the aim of the paper was to draw attention to the actual seat of lesion in sporadic as contrasted with the endemic type of this disease, and this he endeavoured to do by narrating the history and pathological appearances of one of several cases which he has had under his care. Dr. Dowse maintains that in its epidemic form the sensorium is more or less affected from the first, and that the membranes over the superior cerebral convolutions, cerebellum and posterior columns of the cord, including the nerve substance, are primarily, if not wholly, the seats of lesion. On the contrary, he showed by clinical and post-mortem evidence that in the sporadic form the sensorium and special senses are only slightly influenced, and that the inflammation centres itself upon the meninges at the base of the brain and the anterior columns of the cord. He therefore felt justified in giving to the latter affection the name of occipito, or basic cerebro-spinal meningitis, in contra-distinction to the former well-known disease. He drew his conclusions and diagnosis from signs and symptoms as evidenced in the following table:—

Epidemic Cerebro-Spinal Meningitis.	Sporadic or Basic Cerebro-Spinal Meningitis.
Attack sudden, without any especial predisposing cause.	Attack commencing gradually and resembling an onset of acute rheumatism.
Apparently of a contagious or infectious origin.	Usually arising from exposure to cold, exhaustion, and privation.
Sensorium affected from the first.	Sensorium never affected until the last stage.
Excito-motor spasms of a tonic character in groups or groupings of muscles, with marked loss of cutaneous and muscular sense.	Inco-ordination of movement with cutaneous formication, partial anæsthesia, muscular hyperalgia, but no tetanic spasms.
Reflex movements common.	Reflex movements rare.
Vomiting urgent and uncontrollable.	Vomiting not so severe.
Temperature rarely exceeds 100°.	Temperature often rises to 105°.
Purpuric macula diffuse and general.	Macula never seen in the desudate form.
Death usually takes place from coma.	Death usually takes place from apnœa.
Prognosis grave.	Prognosis hopeful.
Post-mortem appearances reveal the membranes over the superior cerebral convolutions and posterior columns of the cord as the seats of lesion.	Post-mortem appearances reveal the membranes over the base of the brain and anterior columns of the cord as the prime seats of lesion.

In conclusion, Dr. Dowse, after laying down some important rules as to treatment, drew the observation of the Fellows to three points, which he considered of interest, for their consideration :—

1st. In reference to the actual seats of lesion.

2ndly. That the patient at the time of attack was suffering from primary syphilis.

3rdly. That the pathological condition of the membranes of both brain and spinal cord presented a most singular state of degeneration—viz., that of gangrene.

January 12.

EXCISION FOR A CYSTIC GROWTH.

Mr. **Gant** brought forward the case of a young woman, æt. 29, from whom he had excised the antrum of the upper jaw for a cystic growth. About eight years ago she felt a small lump about the size of a Spanish nut high up in the left cheek ; this increased in size, and she suffered from neuralgic pains in the face. When admitted into the Royal Free Hospital the tumour presented a double swelling, partly in the cheek, and partly under the lip, projecting down to the teeth. Mr. Gant then diagnosed the cystic growth in and protruding from the antrum. He made an incision from the nasal process of the jaw downwards, and carried it around the alæ of the nose and through the middle line of the lip; the cheek was thus readily reflected and the tumour exposed. He then removed the whole of the antrum with cutting pliers from the second incisor to the last molar tooth, leaving the infra-orbital nerve above untouched. The naso-labial incision was accurately closed with hair-like pins. These were subsequently withdrawn, union having taken place throughout the incision. The patient was shown to the Society, and now can speak distinctly, eat without inconvenience, and the face presents no disfigurement. The tumour, when removed, was apparently a fibro-cystic growth and the antrum had undergone expansion conformably to the growth, especially towards the nares, where the fibroid structure and the osseous wall were moulded. Mr. Gant suggested that the infra-orbital nerve should be preserved, as inthe present case, by a little attention to the manipulative procedures.

Mr. **Bryant** after this qualified his remarks.

RHINO-PLASTIC OPERATIONS.

Dr. **Lichtenberg** showed a patient on whom he performed a rhino-plastic operation. The patient, æt. 16, had been suffering from lupus for ten years, had been treated without success at various hospitals, and, when admitted into the Tottenham Hospital, presented the appearance shown in the drawing he exhibited, having lost the entire cartilaginous part of the nose, with the exception of a minute part of the left ala. Dr. Lichtenberg administered iodide of potass. without any good effect, and then performed the operation first introduced into the country by Prof. Volkmann, of Halle. He removed the scabs in small scarifications of the excrescences crossways, minutely chopping the diseased parts ; a small bleeding ensued, and cold water dressings were applied. In a week or ten days cicatrisation took place in one spot, and in other places the disease appeared sprouting up afresh ; these parts were again attacked at an interval of about a fortnight, and the operation being repeated six times, the disease was cured. On the 31st of last July he performed the rhino-plastic operation, taking the flap from the right side of the forehead ; and here he warned future operators not to be too sparing in the size of the flap, as in this case the aquiline appearance of the nose was greater than he intended, as also the alæ were rather deficient in substance at the point of junction, especially on the left side where a slight sloughing of the margin of the ala took place ; he was not successful in the turning in of the skin round the alæ, in order to prevent contraction of the nostrils, which he attributed to the portion of skin not being large enough. On November 6th he removed the knob of twisted skin, together with a large part of the bridge of the nose by two oval incisions. This improved the appearance, and the septum, which was originally three-fourths of an inch, overlapped the groove in the upper lid, to the right and left of it consiberably ; this he detached from the lip up to the groove on both sides, and having pared and thinned the naturally hypertrophied small flaps, turned them inwards towards the cavity of the nose, and put a strong pin through them, made for the purpose, one end of which had a flat broad head, and the other constructed to screw up the septum to the tightness required. In three days the pin was removed and the operation was complete.

DOUBLE OPTIC NEURITIS.

Dr. **Hughlings Jackson** brought forward, in conjunction with Mr. Brudenell Carter, a case of double optic neuritis in which vision was perfect.

Dr. **H. Jackson** said he was not inclined to express any confident opinion as to the way in which intra-cranial tumours and other adventitious products lead to changes in the optic nerves, but supposed that in many cases the changes resulted by vaso-motor action. As to prognosis, he had now seen recovery from a good many cases of optic neuritis, there being no amaurosis at any stage of it. He urged the use of the ophthalmoscope in all cases of severe brain disease, and especially where there was severe headache. He believed that severe optic neuritis, with much deficiency of sight, was more likely to result when much grey matter was affected by tumours. In every case of recovery from optic neuritis he had seen very large doses of iodide of potassium given ; he could not say what would result if no treatment were adopted.

Mr. **Brudenell Carter** said the case brought forward belonged to a very interesting class, which ophthalmic surgeons seldom saw on account of the absence of any impairment of vision. But they saw many cases exactly similar in appearance in which marked impairment of vision was present, as he believed, from the beginning ; and it was a curious question in what the difference between the two classes consisted. The word "neuritis" was accepted, but he doubted whether there was sufficient ground for considering the state to be inflammatory ; probably it was often the result of an impediment to the exit of venous blood, and was distension and varicosity of veins with consecutive œdema rather than inflammation. This condition, if limited to the internal or fibre-layer of the retina, might not affect vision unless the fluid contents of the eyeball were increased in a degree sufficient to compress the fibres and to impair their conducting power, or to compress the percipient nerve elements of the external layer. Possibly the difference between the cases in which vision was unaffected might be essentially a difference of tension ; but even in the former cases sight was liable to be impaired, or even lost eventually from the supervention of atrophic changes, possibly due to the shock to the nutrition of the parts produced by the arrest of the circulation. As for the general state of the field of vision, its limits would always be curtailed when tension was much increased, and in the case just shown there must be scattered blind spots corresponding with patches of hæmorrhage. Mr. Watson's suggestion about the normal blind spot was one that had often occurred to him ; and some time ago he constructed a perimeter especially to examine into this point. He found, however, that the normal blind spot defied measurement, because the sensitive portions of the retina in its immediate neighbourhood became quickly exhausted and torpid to visual impression. They thus were soon merged, so to speak, in the true blind spot, which appeared to increase in size in every direction as soon as the eye was a little tired. Beside this, there were only a few patients whose powers of observation were sufficiently cultivated to enable them to watch their own sensations with accuracy.

Mr. **Royes Bell** showed a case of

NECROSIS OF ORBITAL ARCH,

followed by eversion of upper eyelid. M. F., æt. 16, was admitted, under the care of Mr. Royes Bell, with necrosis of the supra-orbital portion of the left frontal bone. She was seen first at the dispensary in the Euston Road for a severe attack of erysipelas, brought on, according to her account, by a cold. Considerable sub-pericranial suppuration ensued, and free incisions made to let out the pus. These eventually healed, with the exception of one over the left eyebrow which has continued to discharge ever since. Three weeks ago she felt the bone to move. A probe was passed along the sinus and a great extent of loose bone was discovered. Her general health was good ; no headache ; no strabism. On Sept. 13th the patient was placed under chloroform, and Mr. Bell, having enlarged the sinus with his little finger, lifted out with the forceps a large piece of necrosed bone, which comprised the left supra-orbital arch of the frontal bone from the external angular process to nearly the internal, extending upwards to nearly the superciliary ridge, and backwards involving a portion of the orbital plate of the bone. The wound healed rapidly, and the patient was discharged on the 19th Sept., six days after the operation, with directions to attend as an out-patient; this she failed to do, but came about the close of October, when the eyelid was drawn up and slightly everted by the cicatricial contraction, but more by the falling in of the part that had taken place. The contraction increased, and being readmitted on the 31st Oct. Mr. Bell the next day made an attempt to remedy the deformity by dividing subcutaneously the cicatricial contraction and introducing twisted wires to prevent the parts uniting as before. This was attended with partial success, and Mr. Bell made another incision over the cicatrix and dissected the tissues up, freely dividing all the adhesions. The upper lid was kept down over the eye by passing three silver wire sutures through the margin of the dissected flap and integument of lower lid, and as soon as granulations showed themselves small pieces of cuticle were transplanted from the arm. A pad was applied and both eyes were kept bandaged. Nov. 20: Erysipelas of head and face. Dec. 17: Discharged; and has attended the out-patient room since. The patient was shown.

NOVELTIES.

MILTON'S PORTABLE VAPOUR AND MODIFIED TURKISH BATH.

By this apparatus any one can have a Turkish or vapour bath for a fraction less than a penny, and it can be got ready and the bather placed under the full influence of the vapour, even in the dead of the night, in less than ten minutes. It is so safe and so gentle in its operation that it can be used for children of six or eight years old. By means of it, steam can be got for such emergencies as bronchitis or croup in less than five minutes.

The bath (Fig. 1) consists of a reservoir or basin, A A, having in the centre a well, B B, which again communicates by means of tubes, C C, with the outer edge and lower surface of the reservoir. In the centre of the well is a chamber, D, for receiving and confining the heat. It is in the form of a four-armed cross, open below to the flame of the lamp, over which the bath is placed. The water is poured into the reservoir, and fills it up to the wire ring inside. The flame acts simultaneously on the inside of the chamber, on the tubes, and on the bottom of the reservoir. Thus it is so distributed that a small amount of caloric acts with great rapidity and power, hot water—say of 140° or 150°—being raised to boiling point in about two minutes, while cold water for a bath boils in less than four.

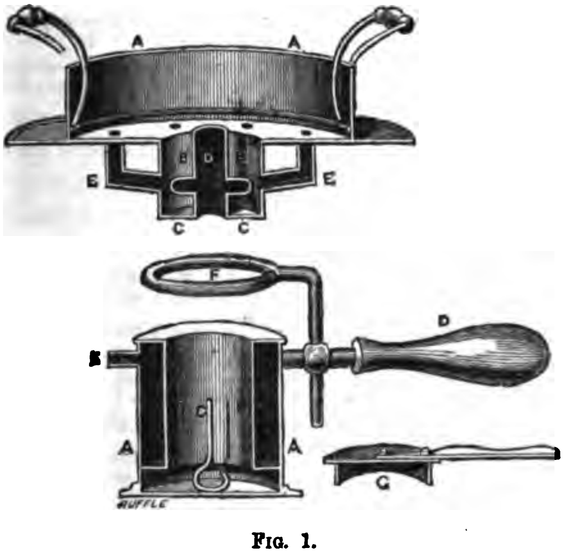

Fig. 1.

The heat is procured by means of a Russian lamp, modified for the purpose, the bearing ring being made considerably stronger than that in ordinary use, so as to secure it against yielding, and firmly pinned to prevent the weight of the bath causing it to slip.

The bath can be rendered so mild that it may safely be used for children, while the heat can be raised and continued long enough to reduce a grown person to the verge of faintness. The whole apparatus can be easily packed in a small carpet-bag, and therefore makes no very great addition to the furniture of the bath or bed-room. It is perfectly safe, occasions no dirt or unpleasant smell, and requires no fixing, pipes, boilers, or, indeed, any apparatus whatever. By means of some very slight additions, which we have not space to particularise, an excellent Turkish bath can be had in this way. One gentleman has already taken thirty, with the best results. The apparatus is extremely simple, and so strong that it can hardly be damaged except by violence; it therefore really never gets out of order.

IN THE LABORATORY.

A TEST FOR ALBUMEN.

M. Galippe recommends a saturated solution of picric acid, $C_6 H_3 O_7 N_3$, as a reliable test for albumen in the urine. By this method the most minute traces of albumen can be readily detected. To apply the test, a few drachms of the picric acid solution is put into a test-tube, and a few drops of the fluid to be examined allowed to fall into the solution. If any albumen be present, it traces a characteristic white line through the solution.

CHEMICAL FOOD.

The formula of Professor Parrish for producing chemical food is given by *New Remedies* as follows:—

℞	Ferri sulph. . . .	ʒx.
	Sodæ phosph., . .	ʒxij.
	Calcis phosph., ā . .	
	Acid. phosph. glacial. .	ʒxx.
	Sodæ carb. . . .	℈ij.
	Potassæ carb. . . .	℥j.
	Pulv. cocci cact. . .	ʒij.
	Sacch. alb.	℔ij., ℥xviij.
	Aquæ flor. aurant . .	℥j.
	Acid. hydrochlor., . .	q.s.
	Liq. ammon., . . .	
	Aquæ dest., ā . . .	

Dissolve the sulphate of iron in ʒij., and the phosphate of sodium in ℥iv. of boiling water. Mix the solutions, and having collected the precipitated phosphate of iron on a filter, wash it with distilled water till the washings cease to have taste. Mix the phosphate of calcium with ℥iv. of boiling water, and add sufficient hydrochloric acid to dissolve it. When cold, precipitate with ammonia, and wash the precipitate. Mix the two phosphates together, and add the phosphoric acid, previously dissolved in water. When cold, add the carbonates of potassium and sodium, dissolved in water, and enough hydrochloric acid to dissolve the precipitate. Dilute with water to ℥xxij., add the sugar, and lastly the cochineal. Dissolve by the aid of a gentle heat, strain, and when cold add the syrup of orange flower.

Contains 2½ grains ferri phosph. } in ʒi.
1 grain calcis phosph.

TASTELESS CHALYBEATES.

In the Transactions of the New York College of Pharmacy there is an interesting paper "On the Salts of Iron, and on a New Series of Tasteless Iron Combinations," by J. Creuse, of Brooklyn, from which we take the most practical points:—

"It has been argued," says the writer, "with reason, that since iron in the human economy is invariably found in the shape of sesqui-salts, such compounds should be preferred to all others when iron is indicated. I may add, also, that it is always in the form of sesqui-salts that iron exists in all animal and vegetable substances which compose human food, and that metallic iron or its proto-salts cannot be mixed with the simplest aliments without completely decomposing them. Protoxide of iron is as unyielding as it is unstable. When you have combined it with strong acids you can go no further with its salts; you can do nothing with them, not even make an alum. Sesquioxide of iron, on the contrary, is a perfect Proteus; sometimes a base, sometimes an acid, it is always ready to enter into some combination or other on the slightest provocation.

"In a paper published some years ago, I demonstrated that nearly all the insoluble sesqui-salts of iron could be combined with the alkaline citrates, forming soluble and tasteless compounds, to which I gave the name of quadruple citrates. Since then further experiments have shown me that other vegetable salts besides the citrates possess also the same property, and that not only the insoluble but also the soluble sesqui-salts of iron could form similar combinations.

"In other words, I may lay down this rule: *All the salts of sesquioxide of iron, without exception, soluble or insoluble, form combinations with all the alkaline citrates, tartrates, and oxalates.* Such combinations are invariably green, whatever may be the colour of the iron salt; they are all soluble in water, nearly insoluble in alcohol; they are all free from ferruginous taste, all perfectly stable, and miscible with preparations of Peruvian bark without decomposition. In all of them the presence of iron is so disguised as not to be detected by chemical reagents, unless after the addition of strong acids or sulphuretted hydrogen, both of which destroy the combination."

Tasteless Iodide of Iron.—This salt, we are told, is obtained in the following manner:—126·3 grs. (1 eq.) of iodine are first combined with metallic iron in the usual way, to obtain the proto-iodide of iron; this is filtered, and 63 grs. (½ eq.) of iodine are dissolved into it. Then a solution of 201 grs. (1 eq.) of citric acid saturated with a fixed alkali, such as potassa, for instance, is added by small portions to the sesqui-iodide of iron. The ferruginous solution, which is at first of a ruby red colour, and has a strong smell of iodine, becomes lighter by degrees, till, as the last drop of citrate is added, it takes a bright apple-green colour; at the same time all smell of iodine and all taste of iron have disappeared; the solution strikes no colour on starch paper, and gives no precipitate with either tannin or ferrocyanide of potassium. It may then be evaporated at a low heat, with gentle stirring, to dryness, when it gives a green mass formed of very small acicular crystals, looking somewhat like cauliflowers. It is tasteless, perfectly stable, unless exposed to direct sunlight, and may be exhibited in the shape of syrup, elixir, solution, tincture, pills, &c. The dose of it need not be more than one-half of that of the proto-iodide of iron, as it is absorbed much more readily.

Chemically this iodide of iron seems to be a combination in which sesqui-iodide of iron plays the part of an acid and the alkaline citrate that of a base; but the subject requires further investigation before it can be decided with complete certainty.

On reading the above process, some may think that, after all, the product is only a mixture of citrate of iron, iodide and iodate of potassium. But, aside from the fact that the different ingredients are not in proportion to form such combinations, Mr. C. appeals to chemical tests to show that such is not the case. Citrate of iron, for instance, is of a ruby red colour, and turns immediately ink-black on the addition of tannin, while tasteless iodide of iron is bright green, and is not coloured black by tannin, but only turned to a light purple hue, after some time. Iodide of potassium dissolves iodine freely; the new salt dissolves it but sparingly, unless when in a concentrated solution. Iodate of potassium is coloured red by solutions of morphia; no colouration is produced by them in solutions of the new salt. This last reaction is important, as iodate of potassium is deemed poisonous by some physicians.

Tasteless Chloride of Iron is next considered. Sesquichloride of iron, the salt which enters in the preparation generally known as tincture of muriate of iron, has the property of forming combinations precisely similar to those of the sesqui-iodide. If an alkaline citrate be added to a solution of sesqui-chloride of iron, in the proportion of two equivalents of the former to each three equivalents of chlorine, a new salt will be obtained of a green colour, quite tasteless, and miscible with vegetable preparations, such as infusions of bark, quassia, &c., without change or discolouration.

This tasteless muriate of iron may be dissolved in diluted alcohol; it forms then, says Mr. C., a tincture of muriate of iron, "which is as superior to the old one as a civilised man is above a barbarian." Its effects, he asserts, are fully equal to those of the officinal tincture.

The weight of citric acid required for a given quantity of the officinal tincture of muriate of iron varies on account of the great variation in the strength and acidity of that preparation, but on an average 90 to 100 grains of citric acid saturated with either soda or ammonia will answer for one fluid ounce of the tincture. This is to be added to the iron solution before the alcohol, and the alcoholic strength of the tincture, when finished, must not be more than 30 or 40 per cent. instead of 70 per cent., as usual.

The sesqui-sulphate and the sesqui-nitrate of iron form also combinations like those described above, but present no special interest which entitles them to more than a simple mention.

It is very important to add that all these new combinations lack the property of coagulating the blood, and for that reason cannot be used as styptics in cases of hæmorrhage, &c. The old officinal preparations will therefore have to be retained for external use, "the only thing they are fit for in a civilised community," says Mr. C. emphatically.

OBITUARY.

Allen.—On the 18th of Jan., at his residence n Harley Street, London, Peter Allen, M.D., F.R.C.S.Edin.

Basan.—On the 9th of Dec., Horace Basan, L.R.C.P.Ed., of Welbeck Street, aged 40.

Beatty.—On the 9th of Jan., James Beatty, M R.C.S.E., of Oldbury, aged 58.

Bousfield.—On the 15th of Jan., E. Bousfield, L.R.C.P.Ed., M.R.C.S.E., of Thetford, aged 35.

Brown.—On the 18th of Jan., at Friar's Hill, Guestling, Harvey Gosset Brown, Student at the London Hospital, aged 23.

Burt.—On the 14th of Dec., at Wood Green, Geo. Burt, F.R.C.S.E., formerly of Ely Place, London, aged 85.

Ferguson.—On the 5th of Dec., D. M. Ferguson, M.D., of George's Place, Dublin, formerly of Enfield, co. Meath.

Fuller.—On the 18th of Dec., at Manchester Square, in his 53rd year, Henry William Fuller, M.D., Senior Physician to St. George's Hospital.

Lucas.—On the 29th of Dec., H. J. Lucas, M.D., of Crickhowel, aged 69.

Macgregor.—On the 30th of Dec., at Portland House, Brunswick Square, J. J. Macgregor, M.D., aged 65.

Nihill.—On the 30th of Dec., at Elm Hurst, Southsea, John Nihill, M.D., Staff Surgeon R.N., H.M.S. "Serapis."

Hayes.—On the 18th of Jan., at Pallaskenry, co. Limerick, of typhus fever, James C. Hayes, Esq., M.D., aged 36.

Irving.—On the 21st of Dec., at Cheltenham, Dr. J. Irving, formerly of the H.E.I.Co.'s Madras Establishment, aged 87.

Lenton.—On the 17th of Jan., Chas. Sheppard Lenton, L.S.A.L., of High Street, Peckham.

Lee.—On the 19th of Jan., at his residence, Hornsey, Newton B. C. Lee, M.R.C.S., aged 52.

Peet.—On the 18th of Jan., John Peet, M.D., F.R.C.P.L., of Shanklin, Isle of Wight, retired Surgeon-Major Bombay Army, late Principal, Grant Medical College, Bombay.

Pugh.—On the 6th of Jan., at Brighton, Cornelia Anne, the wife of W. R. Pugh, M.D.

Sexton.—On the 6th of Nov., at Landana, West Coast of Africa, Wm H. Sexton, L.K.Q.C.P.I., late of Blessington Street, Dublin.

Smith.—On the 15th of Jan., W. T. Young Smith, L.R.C.P.Ed., of Barnsley.

Stokes.—On the 16th of Jan., Geo. Stokes, L.R.C.P.Ed., of Norwood Grove, Shiel Park, Liverpool, aged 40.

Stuart.—On the 21st of Dec., at 28 South Bank, Regent's Park, his residence for nearly 40 years, Abel Stuart, M.D., aged 78, formerly of Barbadoes. His memory will long be affectionately revered by many grateful patients.

Webb.—On the 24th of Dec., suddenly, at Woburn Place, London F. C., Webb, M.D., F.R.C.P., aged 47.

White.—On the 18th of Jan., at Downpatrick, co. Down, Wm. Newport White, M.D., F.R.C.S.I., in his 59th year.

Whiting.—On the 30th of Dec., John Whiting, M.D., of Hereson, Ramsgate, aged 82.

TO CORRESPONDENTS.

⁂ We beg to thank those gentlemen who have, during the past, kindly furnished us with abstracts of their lectures, communications to societies, contributions to journals or other productions, and to say that such abstracts will always receive attention.

⁂ Correspondents are requested to write legibly, and on one side of the paper only.

☞ Books for Review, Exchange journals, and literary communications to be addressed to the Editor of the Doctor at the Office, 20 King William Street, Strand, London, W.C.

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THE DOCTOR.

LONDON, MARCH 1, 1874.

Multum in parvo.

THE POLITICAL TRANSFORMATION.

LAST month THE DOCTOR made its appearance in the midst of the General Election, which came so unexpectedly, and has brought about a transformation in the political world as complete as could well be imagined. The change should perhaps surprise doctors less than many other classes; for although the Liberal party has always claimed to be progressive, and the sympathies of scientific men seem naturally with progress of any kind, medical and scientific questions have been utterly ignored by the late administration, or else they have been dealt with in a manner to excite the hostility, or at least the distrust, of the profession.

We have more than once referred to this state of things, and we distinctly predicted that the doctors would, as a body, refuse to support the Government which treated them with contempt. We know that our prophecy excited a smile, and when we asserted that the profession would be a political power, we were assured the doctors would never agree. And what is the result? No class has evinced so clearly the signs of Conservative re-action. Of course, we take no account of the action of the publicans, who thought their trade in danger. Such action does not evince anything but self-interest, while medical men have never sought anything but the welfare of the community. It is, however, amongst them and the enlightened classes that we discern what is properly called a Conservative re-action, and the phenomenon is worthy of consideration. Hundreds of doctors who were at the prior election admirers of Mr. Gladstone and thorough Liberals have gone over to the Tories. They have not done this under the shadow of the ballot, but in every constituency they have openly acted on the committees of the Conservative candidates. Why is this? We believe that, to a great extent, it arises from the indifference of the late Government to medical politics and medical opinion. The General Medical Council remains unreformed, and the Conjoint Schemes, of which we have heard so much, are not even yet in action. Mr. Stansfeld has deeply offended the profession by taking out of its hands the sanitary work of the country. The need for legislation on many points affecting the public health is keenly felt. Appointments of a medical kind have been filled by non-medical persons, and lastly, the honours of the crown have been withheld from ardent medical patriots. Thus it is we have been asked in all directions, "What has Mr. Gladstone done for the profession?"—the questioner in most cases himself replying bitterly, "Nothing." Not a few say his only recognition of our art was the baronetcy conferred on the President of the College of Physicians; but this cannot atone for his prior neglect, as it was delayed too long—was only, in fact, given amongst the honours bestowed on resignation, and is alone utterly inadequate to represent the claims of the profession on the State. The late Government had many opportunities of showing its sense of the services rendered to society by medical men. A few baronetcies, knighthoods, and other honours would have gone far to appease the anger that has been kindled, while Mr. Gladstone was strong enough to show his appreciation of talent by advancing one or two medical men to the peerage. When this question was brought forward on the recovery of the Prince of Wales we urged that Sir William Jenner ought to be made a peer, and Sir T. Watson would have been a worthy companion in the honour. But what was done then? A single baronetcy and a K.C.B. exhausted the Government stock of honours. The physician who first diagnosed the Prince's case, and shared in the labour of watching it, was actually left without recognition. We would not have it thought that the accident of attending a royal personage is the best or the only claim to distinction; but as it is admitted by society, the event thus partially recognised might have been made the occasion of conferring honour on several doctors, and settling the question whether they are to be excluded from distinctions open to all other subjects of her Majesty. So, again, might the late resignation have been used to do full justice, instead of the slight notice taken, in the person of Sir George Burrows, of the profession he so well represents.

Will the Tories do more? That remains to be seen; but Mr. Disraeli is not insensible to talent, and we trust he may take up in earnest the question of medical reform, as well as of sanitary legislation, to which he is so committed. In doing so, we hope he will not ignore the profession, but availing himself of its services, will afterwards not hesitate to recommend her Majesty to recognise the services that doctors are continually rendering to the State.

CHRONICLE.

THE GALVANO-CAUTERY IN THE SECTION OF TUMOURS.

In a long communication on "The Method of Galvano-Cautery," read by Dr. Trelat to the Société de Chirurgie at Paris, there is a detailed account given of the cases of children who were cured by this means of erectile tumours; the section required hardly four minutes in one case, and in the other six minutes. The cure was complete and without any disagreeable consequences; the operation, easy and rapid, produced no accident; the wound was sensitive and dry, a circumstance very useful towards the progress of reparation. The author related the use he had made of this method, and the advantages which it presents over other methods.

Galvano-cautery has for its chief character the power of being raised to any degree of temperature suited, whether to delicate and precise operations, or to energetic and prolonged ones. The instruments made use of are—first, the stylet or knife; second, the cautery; and third, the cutting noose.

The knife, heated to red heat, is a delicate and fine cautery, which cuts through the tissues as a bistoury, or perforates them like a trocar, but the wound or puncture causes bleeding. When the heat is dull red, the section is bloodless, but very slow. The galvanic cautery is useful only at the dull red, being an instrument of destruction by heat. The noose ought always to be maintained at a comparatively low temperature, hardly red, powerfully compressing the parts which are to be divided during their section. The noose thus used cuts in a minute a space of from ten to fifteen millimetres, the action being slow, regular, and continuous. The knife and the cautery are cooled when in contact with the tissues, above all when there are liquids, and it is necessary, in order to carry on an efficacious action, to heat and re-apply them incessantly.

The scar formed by the cutting noose is flat, smooth, and dry, and about a millimetre in thickness. In arteries of a certain calibre there may supervene secondary hæmorrhages, on account of the smallness of the eschar, but the vessels of the tongue and of the corpora cavernosa or the cord, as well as of angionomas and carcinomas are wont to be well obliterated by this proceeding.

There is hardly any pain; cicatrisation is rather slow; but the accidents of wounds are avoided, so terrible in the first days. Such are the characters of galvano-cautery, admitted also by other experimenters, and which Dr. Trelat has brought forward in the society, presenting two interesting cases.

ABUSE OF MORPHIA INJECTIONS.

Dr. Schutzenberger, of Strasburg, has recently called attention to some dangers resulting from the use of subcutaneous injections of morphia, when the instruments are abandoned to the hands of persons foreign to the medical art. In such cases the patient reiterates the injection when the effect of the first appears to have terminated, and on account of the facile adaptation of the economy to narcotics, is accustomed to make use of enormous doses. Thus, patients who have commenced with injections of one centigramme of the muriate of morphia get to use progressively ten injections of some centigrammes in the day. One American lady had made use of twenty-four injections in the twenty-four hours, each containing four or five centigrammes of muriate of morphia. Her body was covered with tumours, some hard, and others suppurating.

El Pabellon Medico, Jan. 28, 1874, commenting on the above facts, says: The moral of these cases is, that physicians ought never to trust the morphia syringe either to patients or their friends, and they should also be cautious in the use of this remedy.

ON THE RUPTURE OF THE AMNIOTIC SAC.

Dr. A. Gartipuy, in *Le Progrès Médical*, after showing how the amniotic sac is composed, proves, by 2,000 parturitions observed at the clinical hospital, that the spontaneous rupture occurs as frequently as 308 times out of 2,000. This spontaneous rupture is more frequent in multiparæ than in primiparæ, and takes place chiefly at the first instant of painful contractions. The premature flow of the amniotic fluid does not retard, but rather accelerates the progress of labour; it does not exercise any evil influence either on the mother or the child; the prognosis is not then in any way unfavourable when the pregnancy is near its termination.

In some cases the practitioner may practise the premature and artificial rupture of the bag of waters, when, for instance, the uterine contractions are insufficient, the walls of that organ too much dilated, as in cases of idroamnios and twin pregnancies. In a case of bleeding from vicious insertion of the placenta, Depaul, following in the practice of P. Dubois, thought it right to break the membrane when the dilatation of the orifice permits the introduction of a finger, whether contractions have commenced or not. Following this rule, Depaul has often seen the hæmorrhage become so slight that he could allow Nature to terminate the labour.

In eclampsia, when labour ensues, and the pains are strong and regular, whilst the dilatation of the orifice has commenced, and arrived at from one to five centimetres in diameter, and when the presenting part is strongly urged forward, there will be found real advantage in breaking the membranes, and the labour will then be rapidly terminated.

Finally, the rupture of the membranes constitutes a most efficacious method for provoking premature labour; sponge tents, and above all, the intra-uterine dilator of Tarnier which are sure and inoffensive, ought to be preferred.

HEMATOMA OF THE PLACENTA.

Dr. Jacquet mentions in *Le Progrès Médical*, that hematoma of the placenta is one of the most frequent diseases of that organ. There are three kinds of it: 1st. Supravillous; 2nd. Intervillous; 3rd. Subvillous. The author is inclined to believe that supravillous hematoma of the placenta is caused by the degeneration of the maternal tissue of the placenta; that the perivillous cases are produced by rupture of the placental tissue; and that the sub-villous cases may be due to pressure more or less continuous, which the placenta undergoes during labour. He concludes that the transformations of the effused blood in the placenta may cause in it, as in the vessels themselves, a degeneration which has made persons mistake hematomata for purulent collections, and thus give rise to the theory of placentitis.

STATISTICS OF LABOUR.

DR. E. BESNIER (*Lyon Médical*, Nov. 11, 1873,) gave, in the Parisian Société des Hôpitaux, the following account of an epidemic of puerperal fever. In the first quarter of 1873, of 1,656 labours in hospital, there were 67 deaths, or 4·04 per cent. ; of 616 labours in women confined at home there were 8 deaths, or 1·29 per cent. ; and in 2,868 labours attended by the staff of the maternity charity, there were 11 deaths, or only 0·37 per cent. Hence the great importance of favouring births in the patients' own home, and discouraging hospitals for women in labour.

RESOLUTION OF TUMOURS BY IODIC ACID INJECTIONS.

FOR some time past surgeons have used with advantage, for the resolution of glandular tumours, certain subcutaneous injections, which are thrown in as far as the tumour. Recently Dr. Luton, of the School of Rheims, has obtained results worthy of the attention of practitioners, by the injection of a new agent, namely, iodic acid. He has treated with this especially goîtres and glandular tumours. The solution used by him is one-fifth part of the acid in water, of which he introduces about two grammes (thirty drops) into the centre of the tumour. There takes place at once a very active local reaction, but no real accident of gravity. Resolution takes place quickly, without suppuration or eschar. Having regard to the interminable length of glandular tumours, this must be considered a very useful means, which may be adopted also in other cases which are susceptible of resolution.—*Lyon Médical.*

COMBINATIONS OF THE ALKALOIDS WITH THE BILIARY ACIDS.

WE observe in *Lo Sperimentale* that Dr. Abre has noticed that when a soluble salt of a vegetable alkaloid is poured into bile, or into a solution of a biliary salt, there takes place a double action, by which these salts change their acids, the biliary acid fixes on the alkaloid, and *vice versâ* with strychnine, quinine, cinchonine, and emetine; the salt of the new formation is but slightly soluble in water, but easily soluble in excess of bile or biliary salts. With morphine, nicotine, and coneine there are obtained salts easily soluble in water. The glycocolate of strychnine and of morphine and the taurocolate of morphine, and the glycocolate of brusine are crystalline, whilst other salts have hitherto not been seen except in the amorphous state. The author thinks that these chemical actions of the bile on the vegetable alkaloids are most important in practice, and reminds us that the slight solubility of some of these biliary salts formed by double decomposition points to the fact well known in therapeutics—the accumulation in the liver of certain alkaloids—a fact which may guide the medico-legist in the choice of the organ which he ought to examine in cases of suspected organic poisons.

FALLING OF THE NAILS IN DIABETES.

DR. FOLET (*France Médicale* Jan. 31, 1873) in a meeting of the "Société Centrale de Médecine du Nord," spoke of a young lady, æt. 25, who came to consult him, and complained of falling of her nails without either ulceration or inflammation. Both hands and feet were affected. It appeared that the patient's father had also suffered from a similar disease ; and eighteen months afterwards he had died of diabetes. The urine of this patient on examination was found to contain six grammes of sugar in each litre.

Diabetes is known, when advanced, to produce necrosis of the feet and hands.

The patient was immediately put on meat diet, with abstinence from starchy food, and was given Vichy water.

HOW TO MASK THE TASTE OF COD-LIVER OIL.

ACCORDING to the *Courier Méd.* the following formula is employed in Germany, viz :—

Powdered gum Arabic	68 grammes ;
Distilled water	60 „
Syrup of lactophosphate of iron	180 „
Clear cod-liver oil	250 „
Essence of bitter almonds	6 drops.

The following has been used at Charenton by Dr. Josias, viz :—

Clear oil of cod-liver	100 grammes ;
Powdered gum arabic	50 „
Water of cherry laurel	20 „
Orange flour water	20 „
Simple syrup	200 „
Calcined magnesia	4 „

ICED WATER ENEMATA IN DYSENTERY.

DR. B. WENZEL has related in the *Berl. Klin. Woch.* a series of successful cases of dysentery treated by enemata of iced water. They arrested both hæmorrhage and tenesmus, and reduced pyrexia, and after one trial, a patient would call for another enema as soon as pain recurred. Only rarely was opium given, the treatment being confined to the iced water alone. In acute cases he cured. In old chronic cases the benefit was temporary, as in all other modes of treatment. While, therefore, this plan gives relief in chronic cases, Dr. Wenzel concludes that in acute or recent cases it is the most effective at our disposal.

CHLORAL HYDRATE IN LABOUR AND IN ECLAMPSIA.

DR. FRANCO-MAZORRA observes (*Gaz. Heb.*, No. 34) that the application of chloral in obstetrics has given rise to serious studies, many of which have been collected by the author, in addition to stating his own experience.

The author divides his work into two chapters. In the first he treats of the administration of chloral in natural labours, and in cases of rigidity of the uterine neck, which are but a variety. The second heading is consecrated to the study of the influence of chloral in epileptic attacks. In each of these headings are collected the observations relating to each point, reuniting those in foreign parts, and strongly insisting on his personal experiences, of which he has been able to analyse the details. The total number of observations is 50, and the following conclusions have been arrived at :—

1. The hydrate of chloral ought to be pure, otherwise it may be dangerous to use it, or, at any rate it may be without any true therapeutic value.

2. In women, during labour, chloral firstly acts as a calmative, then produces sleep, and diminishes considerably their pains.

3. The uterine contractions continue to take place during the sleep caused by chloral. They are shorter, less frequent, and pretty energetic. In general the duration of the labour is shortened by the influence of this agent.

4. The anæsthesia produced by chloral may be sufficiently complete, and make the woman quite unconscious even during the expulsive period, and a certain time after birth.

5. Given in small doses, chloral sometimes causes agitation, which ceases when the dose is increased.

6. The remedy may be given at all periods of labour.

7. Chloral may also favour the cure of puerperal eclampsia, by modifying the general condition of the patient, and producing a forced repose. Puerperal convulsions, of whatever nature they may be, are calmed by chloral.

8. The sleep produced by chloral is light, and after it, women have neither drowsiness nor headache.

9. The only contra-indications to its use are weakness or disease in the fœtus, the debility of the mother, which may cause us to fear for coma.

10. Chloral may be administered in clysters, in draughts, or in suppositories. It is necessary to give it in the dose of four grammes if we would obtain immediate calm and sleep, without any period of agitation. If the desired effect were not produced, the dose of one gramme every five minutes is required.

11. In eclampsia, it is well to keep the woman under the influence of chloral for a long space of time. Its action is more rapid, more marked, and longer in women subject to lingering labours, or to want of sleep.

12. The consequences of labour are not graver when chloral is given.

13. Chloral may advantageously replace chloroform in all those cases in which that agent is used in labours.

14. In the same mode as in eclampsia chloral favours the cure of acute mania.

Only one case of death has been registered by the author; it occurred in a primapara with albuminuria, who died after ten fits of eclampsia, in spite of taking 4 grammes of chloral.

ON LOCOMOTOR ATAXY.

DR. CHARCOT, Physician to the Salpêtrière, in a series of lectures that have been reported with great care by Dr. Bourneville, makes, amongst others, the following remarks:—

"Besides alterations of the posterior columns, microscopic investigation has revealed atrophy of the posterior roots, posterior spinal meningitis, and atrophy and grey degeneration of various cerebral nerves.

"Opinions still differ concerning the real origin of the disease. We know that it depends on sclerosis or grey induration of the posterior columns of the spinal cord. This process is accompanied by hypertrophy with fibrilation of the neuroglia, causing atrophy of the true nervous tissue. The spinal meningitis, which co-exists so frequently with sclerosis of the posterior columns, and which in such cases is entirely limited to these parts, would appear to furnish a new argument in favour of the irritative nature of the alteration. But where does this irritative lesion begin: in the neuroglia, or in the nervous element? Without pronouncing a definite opinion, M. Charcot is strongly inclined to the belief that the parenchymatous irritation is primary, and that the interstitial change is secondary.

"In general locomotor ataxy, a degeneration of a special portion of the posterior columns is, as pointed out by the author and Vulpian, the characteristic and essential lesion. It is known that in cases of this kind there are to be observed, in addition to the sclerosis of the fillets of Goel, which is almost always present, two slender grey bundles. These, viewed on the surface of the cord, appear to occupy the posterior lateral fissures, and the most internal sensory roots appear to emerge from them. Degeneration of these bundles is, then, the special characteristic of the disease under consideration.

"The disorders of sight may be classed in two divisions—1st, disorders of accommodation, diplopia, dependent upon lesions, more or less transitory; 2nd, visual disorders due to a special degeneration of the optic nerve.

"To the naked eye, the alteration of the optic nerve appears in the form of a grey hardening. It begins, as a rule, at the peripheral extremity of the nerve, and then gradually extends towards the central parts. When examined microscopically, it is found that the degeneration which constitutes the grey induration resembles what occurs in the spinal cord."

He does not mention that diphtheritic paralysis, when it attacks the lower extremities, usually simulates locomotor ataxy.

JOTTINGS FROM JOURNALS.

ELECTRICITY AS A CURE FOR FROST-BITE.—Dr. Santopadre employs for this purpose Gaiffe's apparatus with a current of medium intensity. The positive pole is placed over the "bite" and a little to one side, while the negative is passed all over the inflamed part. The sitting lasts about fifteen minutes. The pruritus ceases in general with the first application, and the pain along with it. After three or four applications the cure is found complete. —*L'Independente de Torino*, No. 36.

INTERMITTING LAMENESS.—A very curious thing has been described by Dr. Sabourin, namely, that lameness may ensue from obliteration of arteries. Horse lameness is often so obscure that any light proves desirable. It is not, however, confined to the horse, but extends also to man. The cause, as observed, is owing to obliteration of the aorta and iliac arteries. Commonly, in previous good health, the subject begins to limp (*boiter*), in one or two limbs to tremble and finally to fall. Rest is commonly productive of relief. MM. Bouley and Goubaux long ago pointed out the nature of the affection in horses, while M. Charcot first pointed out its occurrence, comparatively rare, in man. Arteritis has been supposed to be the occasion in horses, owing to the violent efforts they have to make, and embolism in men. In any case the occurrence affords a favourable illustration of the advantages of the study of comparative pathology.

THE NEW HOTEL-DIEU.—The same journal in which M Sabourin's paper appears, to wit, *Le Mouvement Médical*, contains the important observation by M. Bouchardat relating to the reconstruction of the Hôtel-Dieu, that, other things being equal, the mortality is not greater in large hospitals than in small.

EARLY MOTHERHOOD.—A case is reported in the *Philadelphia Medical and Surgical Reporter*, vol. xxix., No. 23, of a young negress, not quite twelve years old, who was recently brought to bed of a female child in Navasota, Grimes County, Texas. It is commonly supposed that women in warm climates reach puberty sooner than in cold. This, however, is quite a popular error. The writer of these lines, in repeated instances, knew cases in which girls began to menstruate at the age of eleven, and even earlier; and, moreover, he was present in the Rotundo Lying-in Hospital, Dublin, when a girl only in her thirteenth year was safely confined. Such cases are quite possible. But the early superinduction of the reproductive functions is a very great outrage on Nature, and is one of the causes of the inferior physical status of many Eastern nations.

FERNAND PAPILLON.—This truly remarkable man was a pupil of Professors Robin and Wurz. At the time of his greatly lamented decease he was assistant in chemistry and histology, or what the French call *préparateur*. His death, at the early age of twenty-six, was occasioned by a malady contracted at the obsequies of his friend, Legros. He was a native of Alsace and had contributed a series of papers destined to appear in a volume to be termed "La Nature et la Vie," of the greatest possible merit, as the writer of these lines, having perused them all, can testify. His decease leaves a blank in the ranks of science which it may seem trite, yet is most true to say, it will prove most difficult to fill up. Let his memory be revered.

HYSTERIC EPILEPSY, OR EPILEPSY WITH HYSTERIA.—Dr. Charcot, of the Salpêtrière, distinguishes between epilepsy pure and that complicated with hysteria. The former is ushered in, says M. Charcot, by a short sharp cry; in hysterical epilepsy, so termed, this cry is more prolonged. In epilepsy we find, or often find, stertor and coma, whereas, in hysteria, the patient resumes and preserves her consciousness and intellectual integrity. In epilepsy, unhappily, these are found to decline. The ovary and uterus are the starting point of the one, whereas, almost any part of the organism may prove the *fons et origo* of the other. Dr. Charcot's observations are important; but what he terms hysteric epilepsy is rather a form of aggravated hysteria than true epilepsy. Any one conversant with both complaints will find no difficulty in the diagnosis, and a fuller account of it is given in another column of this issue of The Doctor.

Ferrier's Experiments.—*Le Progrès Médical*, contains an able *résumé* of Dr. Ferrier's experiments in relation to cerebral physiology and pathology. The psychological deductions of Dr. Carpenter, from Ferrier's experiments, appear to the present writer erroneous, but the experiments themselves in so far as concerns the localisation of functions and the symmetrical action of both sides of the brain are valuable.

Trimethylamine.—Dr. Peltier records the results of some trials of the exhibition of the chlor-hydrate of trimethylamine in acute articular rheumatism. Forty-eight cases in all are summarised, and the conclusions which Dr. Peltier considers himself justified in drawing are, that the trimethylamine calms the pains, lessens the local congestion, and allays the fever—in short, that it realises results hitherto unrealised.

Hydrophobia.—In the *Gazzetta Medica Italiana*, published in that ancient centre of medical studies, Pavia, *i.e.*, Padova, are very full details of a case of hydrophobia treated with the hydrate of chloral by Dr. Nemesio, in Brescia. The medicine was given by enema, 36 grammes in all, with promptness. The result, however, displayed the same wretched nihility which has hitherto attended every attempted remedy in this disastrous malady.

Ulcers.—Nussbaum's method of treating ulcers by making an excentric excision down to the fascia, about a finger's breadth outside the margin of the ulcer, and plugging the incision for a day with lint, merits every attention. He has treated upwards of sixty large chronic ulcers in this way with the utmost success. The patient, before the operation, is placed under the influence of an opiate.—*Le Courier Médical*, No. 52, Year 23.

Animal Food.—Considering the increasing costliness of azotised animal food, the recommendation of horseflesh, now turned to so little account, by the *Independencia Medica*, of Barcelona, is deserving of notice. During the recent siege of Paris by the Germans the Parisians consumed 7,000 horses. Larrey, the famous surgeon, formed the highest estimate of the alimentary properties of horseflesh. In Egypt, during the beleaguerment of the city of Alexandrina, the people not only lived on horseflesh, but freed themselves by its employment from a severe epidemic of scorbutus. In France, not to speak of other countries, there are upwards of 3,000,000 horses, which, if employed as food, would add immensely to the resources of the country.

Mortality.—During the week ending Saturday, Nov. 1, 1873, 5,491 births and 3,706 deaths were registered in London and twenty other large towns. The annual mortality was 26 per 1,000, 20 per 1,000 in Edinburgh, 28 per 1,000 in Glasgow, and 22 per 1,000 in Dublin. The mortality in Glasgow is thus, as we see, vastly greater than in other towns, and argues a very low condition of social life. If the different portions of the community could only be induced to follow proper sanitary observances in regard of eating, drinking, clothing, ventilation, and cleanliness, the mortality per 1,000, it is probable, might sink to 15 and even 10 per 1,000 annually.—"Weekly Return of Births, Deaths, and Marriages," by authority.

The Future of Therapeutics.—The *Raccoglitore Medico*, published at Forli, contains an able essay on this subject by Dr. Vincenzo Ciccone, well deserving of translation and general European publicity. Since everything in this world, the doctor begins, has a beginning, a law in fine, a rule of existence, we are entitled to ask the how and the why as to everything that has the pretension to term itself science. Behind the phenomenon stands the reality, and this again is associated with the phenomenon. If we do not know all the issues, we have at least become acquainted with a multitude of laws. The first law which governs organic nature is the law of *succession*; the second is the law of *gradation*; the third, the law of *progression*; the fourth, the law of *perfection*; the fifth, the law of *proportion*; and the sixth and last, the law of *harmony*. All these laws, especially as they are related to medicine, are gone into in succession with fulness and clearness.

TOPICS OF THE TIME.

TUMOURS OF THE JAWS.

Dr. Dolbeau (*La Tribune Médicale*, Feb. 1, 1874) mentions that the upper jaw is the favourite seat of cysts, which are sometimes seen between the fifth and tenth year of life. The canine fossa is the favourite position. These cysts are very slowly developed. Sometimes the two faces of the jaw swell within and without, and the cyst reveals itself under the aspect of a bi-obed tumour. These cysts may enlarge, but they rarely perforate the jaw spontaneously. When they open it is because a neighbouring tooth has been drawn, or they have been punctured.

Diagnosis.—The diagnosis is difficult in the first period. No sign alone is sufficient of itself; we must aid ourselves by a collection of physical and functional pieces of information, in order to arrive at certainty. If you have before you a little child which has a small depressible tumour, seated in the canine fossa, and which is apparently painless, you may at once say—"That must be a cyst of the jaw."

If we have to do with an adult, the problem, though more difficult, is not insoluble. If the swelling have but recently commenced you may be able to connect the cause with an inflamed tooth. In this case you may at once think of a sub-periosteal tumour.

If the tumour be of old standing, we require further examination. Most errors in diagnosis in the disease we speak of have been made from not counting the teeth. If a tooth be absent you may suppose that its follicle may be the cause of the tumour which you are considering.

When the disease is further advanced diagnosis is easier; there is parchment-like crackling, fluctuation, and transparency to guide us.

As to the seat of the tumour, remember that the angle of the lower jaw often is notably thickened from the presence of a cyst developed between its laminæ. If the tumour embarrass you because of the signs of solidity which accompany it, count the teeth, and you will conclude that it is a tooth, most frequently the wisdom tooth, which is in fault. And, lastly, when we come to speak of the tumours of the maxillary sinus, we shall see how these are distinguished from those of the jaw.

The prognosis is generally good, and it is generally only the element of pain which annoys the patient, and even this is very rare; but when much time has been lost and the jaw has been invaded by the disease, our progress should be more reserved; the neighbouring teeth are shaken, and the solidity of the jaw is compromised. The prognosis depends on the age of the disease and the volume of the tumour. We easily understand that if the cyst has attained enormous dimensions, the situation is unfavourable, since we are often compelled to make a resection of the jaw. The infirmity is less serious if the alveolar border alone is compromised, for the maxilla remains intact, the face is not deformed by the necessities of the operation, and an artificial plate, well made, may replace the teeth which are taken out.

The prognosis, when under the periosteum is generally good; for such tumours compromise less the integrity of the jaw, and experience has taught us that they are always curable by an operation of a simple kind well carried out.

What is the treatment of cysts of the jaws? Here we must clearly mark out the difference between subperiosteal cysts and follicular cysts.

As to the first, we must, above all, attack the cause which has produced them, and we must extract the diseased tooth on which they depend. Sometimes this simple operation suffices to open the centre of the cyst, and allow of it healing. But occasionally the cyst is isolated, and the tooth may be extracted and yet it is not emptied. In this case do not expect any good results from punctures to evacuate it; they are insufficient, even when followed by iodised injections; the falling in of the bony walls is difficult, and the granulation of the internal wall of the cyst may not be rapid enough to prevent the cyst from re-forming. There are, however, doubtless cases of cure in this way related in the annals of science, but they are exceptional.

The best thing to do is to excise the bag of the cyst with the serrated forceps and scissors; that is generally sufficient to bring about a cure.

The treatment of follicular cysts has a great analogy with that of the foregoing. Punctures and irritating injections give no security of success; experience has pronounced itself even yet more categorically on this point. Do not hesitate to excise them widely.

You may sometimes see the cavity remain stationary without closing; but be patient: it will be filled up. In any case, by opening the bag you will have removed the disease, and put the bone out of danger of being affected.

These operations may be made through the mouth; but if the cyst be large and enormous, be more secure, and operate through the cheek. You will, however, not lose sight of the duty imposed on the surgeon, when operating on the face, of preserving as far as possible the features from all deforming incisions; you will separate, by an extensive but hidden incision, the cheek from the jaw, and will attack the bone, if you can, with the gouge and mallet.

Twenty years ago, in cases like this resection of the jaw was made use of.

The disorder may be more extensive: the two laminæ of the bone may be opened out; if they are out of place they must both be excised; the lower border of the jaw (if we have to do with the lower jaw) is always there to preserve for the face its harmony and solidity to the apparatus of mastication. The border itself may be implicated, when the whole of the jaw must be resected, but it is necessary then that we should be compelled by the state of the parts, for however little care be taken of the bony tissue, nature will make use of it in repairing the parts, since it is quite healthy.

EPILEPSY AND HYSTERIA.

Dr. Charcot has shown in his clinical lectures at the Salpêtriére Hospital of Paris, a certain number of signs which enable us to distinguish attacks of hysteria from those of true epilepsy.

The first are seen in the seizure, considered in itself, and comparing it in the two diseases. In hysteria, Dr. Charcot points out, the fit announces itself almost always by pretty long prodromes. In the whole group of hysterias, which are ovarian in origin, these prodromes constitute an especial cause, which, commencing in the ovarian region, successively reach the epigastrium, the throat, and the head. These precursory phenomena, so curious, and of incontestable value in diagnosis, are wanting in epilepsy; and if in this disease there are observed symptoms which precede it, the sensations are differently seated, and are only a few seconds in advance of the attack.

The cry which hysterics sometimes utter at the moment of the fall is generally long, modulated, and cannot be confounded with the short cry of the epileptic. In this phase, when the patient has fallen, the symptoms of both affections have much resemblance; the head and the eyes are equally deviated in both, the limbs are tonically convulsed, the whole body becomes stiff, the face is congested, and a bloody serum issues from the mouth.

But the differences reappear again very quickly, at the moment when the epileptic snores, in a manner reminding us of the apoplectic stertor, whilst the hysteric patient appears, on the contrary, either to come to herself again, or to enter into a period of contorsions. These contorsions, so curious and sometimes frightful, vary much in form, and it may be said that each patient offers a difference in her symptoms. During this time the hysterical patient appears under the influence of a delirium, at times excessive, and which determines in great part contorsions, gesticulations, &c. Dr. Calmeil has in his work cited numerous examples of these strange convulsions, observed especially in the epidemics of Loudon and San Medardo, out of which the priests drew so many inferences, and imposed on the credulity of sensitive persons. Many patients shown by Dr. Charcot presented the symptoms of the period in a less marked way.

To these contortions succeeds, in hysteria, a delirium relatively tranquil, constituting one of its principle characters—this is of being accompanied with hallucinations of vision and of hearing. The patients hear bells ringing, voices, &c.; they see animals of all kinds flying in the air or crawling over the walls; the patients make strange gestures to ward off these imaginary animals, and sometimes fancy that they are treading on snakes, leaping up in order to avoid them. This delirium, which, to a certain extent resembles that of alcohol, differs much from epileptic delirium, which consists, as is known, in a maniacal excitement, sometimes of extreme violence and of sombre character, which makes these patients very dangerous.

When we have before us a woman who suffers from a doubtful attack, the compression of the ovary may contribute to clear up the diagnosis ; an epileptic will not experience any effect ; but a hysterical woman, if the ovary be the organ affected, will experience, if not a cessation of the attack, at any rate a more or less great modification of the symptoms.

Sometimes, and this is the case both in hysteria and in epilepsy, the fits are enchained in series, and produce in some patients the *status epilepticus*, and in others the *status hystericus*. In such cases the thermometer will give us a wonderful assistance ; in epilepsy, in the fit, the temperature rapidly rises to 40°, 41°, 42°, and death sometimes closes the morbid symptoms ; in hysteria, in spite of the frequency of the attacks, the thermometer is only 37° or 38°.

Besides the convulsive attacks there are other characters which facilitate the diagnosis : epileptics are irascible, and subject to impulses which make them dangerous ; hysterical women are fantastic, but not dangerous.

The special vertigo, so frequent in epilepsy during the interval of the fits, has no equivalent in hysteria. The mental state already mentioned by several authors is very different in its manifestations in the two diseases. The hysterical woman has her intellect as clear after as before the attack. The epileptic, on the other hand, whenever there is much intensity in the disease, feels his intellect lessened daily, and, in a shorter or longer period of time, falls into a kind of stupor, which commonly ends in true dementia. These principal distinctive symptoms appear to determine a diagnosis, and according to Dr. Charcot are well enough marked.

EPILEPTIC INSANITY.

THE *Journal of Mental Science*, Jan., 1874, contains the following extracts taken from a lecture by the late Dr. S. Rae, which will be read with interest in connection with the above :—

"When insanity affects the adult, after, it may be, a long continued epilepsy, it may take the form of mania, monmania or dementia. The maniacal symptoms generally appear after a succession of epileptic fits, and they are very peculiar in their character. The patient destroys his dress, is noisy and clamorous, and blindly and impulsively dangerous, striking out violently, or dashing himself against any one without any provocation, for no apparent reason, and without any warning. I had one such epileptic, who, when excited, spoke in high falsetto voice about the holy fathers ; and, if he had an opportunity, he would fly at any one near him, and either kick at his testicles, or throw him down and attempt to gouge his eyes. I had another case in which the gentleman spun round his padded room incessantly on his head, with his feet up against the wall.

"I know of no form of insanity where the maniacal symptoms manifest themselves in such blind impulsive fury. The mere presence of two or three attendants will control almost any maniac except the epileptic, whom no fear or threats of control can daunt. The duration of these maniacal attacks may vary. It rarely exceeds ten days, seldom indeed more than three, and sometimes only lasts a few hours.

"When the symptoms are those of monomania the delusion varies in different cases, but very frequently manifests itself in a homicidal impulse, less frequently in a suicidal one, often in an unfounded and insane suspicion, or morbid vanity. It is remarkable how frequently the symptoms are of a *religious* character.

"I think you will seldom find a monomaniacal epileptic who does not possess and take great care of his Bible, and read, or seem to read, it attentively at certain periods.

"Dr. Howden has described this religious phase of epilepsy very ably in a paper in the January number (1873) of the *Journal of Mental Science*. He gives a few very interesting cases from his own experience. In some of them the delusion was that the person was commissioned to save the world ; in another to kill the devil ; that of another that he was sometimes Adam, sometimes God, sometimes Christ, and sometimes the devil. Such delusions are frequently formed when the patient is in an epileptic trance and sees visions ; sometimes they are permanent, and not unfrequently accompanied with a strong homicidal tendency.

"The consideration of the cases described leads Dr. Howden to inquire "how far epilepsy has had to do with the origin of certain religious creeds, and how far the visions of many so-called religious impostors may have had an epileptic origin ?"

Accordingly he finds among other examples that Ann Lee, the mother of the *Shakers*, was an epileptic. During her epileptic trances, she had visions of the Saviour, who "became one with her in body and spirit."

"The visions of the celebrated Emanuel Swedenborg, in which he received revelations from above, visited hell, &c., were probably all due to these epileptic delusions and trances.

"The so-called prophet Mahomet was undoubtedly an epileptic. 'I do not see,' says Moreau (de Tours), 'how it can be denied that the fanaticism of Mahomet arose from the maniacal delirium or diabolical enthusiasm of epilepsy, if we look carefully into his life and actions.'

"By his ecstatic visions had he not become the dupe of his visions, whence sprung the first idea of his divine mission, and then had not these visions become the principal, if not the whole basis of his apostolic works, as well as the source of his audacity, and his prophetic power over the ignorant and superstitious spirit of his countrymen ?"

INDEPENDENT DEPARTMENT.

REMARKS ON PYÆMIA AND ALLIED AFFECTIONS.

By C. A. GORDON, M.D., C.B.,
Deputy-Surgeon-General.

A LIVELY and important discussion is at present in progress in regard to the causes of the great mortality observable among the subjects of severe injuries and surgical operations. These causes are described under the names of hospitalism and pyæmia, but inasmuch as the high death-rate described is not alone confined to hospitals, and the precise nature of the several conditions intended to be indicated by the term pyæmia can hardly yet be looked upon as determined, much room exists for further investigation in regard to them. Upwards of five-and-forty years ago pyæmia became the subject of systematic investigation by continental surgeons ; from that time till the present it has been carefully studied, clinically and experimentally ; the Franco-Prussian War has afforded ample field for prosecuting the inquiry, and given to inquirers both in France and Germany material which has enabled them to very materially advance the state of actual knowledge in regard to it.

M. Démarquay (a) lost no time in making known the conclusions to which he had been led by the vast surgical experience afforded him by the two sieges of Paris of 1870-71, nor can the proposed remarks be better begun than by a *résumé* of those made by so high an authority. It is no doubt fresh in the recollection of our readers that the whole subject of pyæmia was, soon after the late war, brought before the Academy of Medicine, and thus many facts of great consequence in regard to the etiology of the affection were brought to light. Adverting to them, M. Démarquay notices the circumstance, already known to everybody, that, as a rule, operations are more successful in the country than in towns; in large ventilated apartments than in those that are confined and ill-ventilated, and that crowding of wounded together is followed by fatal consequences to them—all of which facts, be it observed, were pointed out by army surgeons in this country, beginning with Sir John Pringle in 1742. He describes pyæmia, septicæmia, and traumatic fever as three distinct forms of disease, and, like some of his English brethren, believes that although they occur more rarely in the country than in cities, they are by no means unfrequent under the former conditions; also that they happen after ordinary accidents, as they do after wounds received in war, provided circumstances are favourable to their development. Thus, the occurrence of an abscess opening into a large vein will produce pyæmia precisely as may be caused experimentally; and a similar result may arise from the removal of a tumour over a vein, or other cause producing phlebitis, and the ordinary results of inflammation, all these being in some instances produced by so simple a cause as venesection. In other cases he has observed the same results produced by the application of a caustic in the treatment of varicose veins; and he believes that when pyæmia occurs after operations in connection with the rectum, abscess of the liver, by reason of communication through the portal vein is more frequently met with than in ordinary forms of pyæmia.

It by no means follows that a person affected with traumatic injury must necessarily be attacked with pyæmia or its allied affections, even if patients in the same ward or in adjoining beds are so affected; neither is it a necessary consequence of phlebitis, although both circumstances must necessarily be viewed with apprehensions.

Phlebitis, on the other hand, fails to explain all the cases of pyæmia that occur, especially septicæmia; the latter considered to have its cause in the absorption of altered serum in long-continued suppuration, and to be in some instances capable of cure by evacuating the offensive and offending matters, whereas pyæmia has for its cause the absorption of pus globules. In effect, septicæmic changes produce essentially gangrenous affections, as M. Sedillot has proved experimentally. He is further of opinion that when the gangrenous principle is very active the animal experimented upon perishes before material disorders have had time to take place, whereas, when life is maintained for a short time longer gangrene appears. Even then, however, the case may not prove fatal; but when recovery takes place all the usual sequences of mortification take place, such as eliminative inflammation, separation of the eschars, and so on. Various experiments have of late been made with a view to determine the action of putrid substances introduced into the serous cavities, and into the cellular tissue, the animals subjected to these tests dying precisely as if the morbid materials had been introduced into the veins or bones. As to the precise nature of the toxic matter different views have been entertained, and the question asked, "Does it consist of the elements of albumen which have themselves undergone such a change as to become pernicious to the organism in which they have taken place;" or, on the other hand, "Have they given rise to a new substance." In a future part of these remarks it may be found more convenient than here to enter more fully upon the consideration of specific poison and its nature, it being only necessary here to observe, that when violence is applied to our tissues so as to contuse or tear them, the albuminous liquids, mixed with a certain quantity of blood is effused, these become changed under the influence of heat and air, and being absorbed, produce septicæmic effects, as congestions, and softening of the lungs and other organs. Such effects may succeed amputations, removal of tumours, injuries of the muscles, and other accidents leading to the retention of pus deeply seated among the tissues; they are, however, quite distinct from traumatic fever on the one hand and from pyæmia on the other; traumatic fever, as described by Billroth, being no more than an ordinary accompaniment of local inflammatory action, while septicæmia and pyæmia represent the more severe forms of "intoxication" from the presence in the system of putrid matters or pus. A ready means of diagnosis between these is found in the temperature of the body. In ordinary pyrexia it never rises above 38° C. or 100·2° F. to 39° C. or 102·1° F., so that when it reaches 40° C. or 104° F. the commencement of pyæmia or septicæmia may be considered to have begun, especially after amputations, and when some degree of osteo-myelite is present in addition. M. Démarquay points out that the importance of osteo-myelite in producing pyæmia or septicæmia has only of late received the attention it deserves; and it is chiefly for the purpose of more clearly establishing this connection than has heretofore been done that he has published the results of his researches, it being his opinion that the connection exists, not only in traumatic injuries of the bones, but in diseased conditions of them, although he, like other inquirers, is at a loss to explain the precise cause of the affection in the latter circumstances.

The earlier students of the subject of pyæmia believed that globules of pus from the surface of wounds were simply absorbed by the open mouths of veins, thus carried into the system, and then deposited under the form of abscesses; or that, being formed in the interior of inflamed veins, it was re-deposited as metastatic abscesses in the liver, lungs, or other organs. These theories date back as far as 1829, at which time the connection between osteo-myelite and the affections in question were indicated by Blandin, Berard, Breschet, and Dance. The smaller prevalence of visceral abscesses after amputations through articulations than through the continuity of bones was then observed by M. Blandin; subsequently,

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(a) "De l'Ostéo-myelite dans ses rapports avec l'Infection Purulente." Paris: P. Asselin. 1872.

MM. Berard and Gosselin have expressed themselves as unable to find sufficient explanation of septicæmia in simple phlebitis, the former being led to look upon the affection as resulting from pus after long retention being decomposed, and its serum being absorbed, as described by Sedillot in a work (*a*) published by him in 1849. In that work he remarks that, "pyæmia is particularly characterised by *purulence* and determined by the intermixture of healthy pus without odour. Septicæmia is in its nature essentially gangrenous, and is caused by the introduction into the blood of altered serosity of pus." From observations made by him also, he was led to believe that a *coincidence* existed between purulent deposits in the liver and disease of the osseous system, and that the same occurred also in cases where amputation was performed on account of diseased bone. In 1855 M. Vallette published a memoir on "Osteo-myelite." (*b*) He divides the affection into the acute and chronic forms; he observes in reference to the former that one variety is characterised by the rapidity with which it advances to a fatal termination; also that another variety, which he designates subacute, has only been observed after amputation of the thigh. From six to forty-eight hours after the operation symptoms of pyæmia appear, at the same time that the discharge upon the dressings becomes insupportably offensive. He considers that so long as osteo-myelite is absent the early stages of the affection may be checked by quinine in large doses, and further, that although osteo-myelite is incurable, other general conditions were concerned in the production of the two affections as they were observed after the battles of Alma and Inkerman. In many of those cases the pathological characters of pyæmia existed in the absence of suppuration of the medulla, which only persisted as the first degree of osteo-myelite, as if to indicate that vitiation of air in hospitals or ambulances which predisposed to pyæmia, favoured also the occurrence of the diseased condition of the bones, the determining cause of the latter being the existence of an injury penetrating to the medullary canal. In nearly every case of osteo-myelite, whether acute or chronic, pyæmia is also present, both seeming to be produced by the same general causes. In alluding to the diagnostics between them, he observes that where both exist, in addition to the ordinary symptoms of pyæmia, *hernia* of the medulla is to be found at the extremity of a bone divided in amputation, with separation of the periosteum, the issue from the wound of blood and fœtid pus, the abundance of the discharge being out of proportion to the extent of secreting surface, and yet, strange enough, as pointed out by M. Démarquay, the dependence of these two affections as cause and effect is not alluded to by M. Vallette.

SPECIAL DEPARTMENT.

REPORTS ON LIFE ASSURANCE.—II.

OUR first report, issued last month, laid down the doctrine that the "labourer is worthy of his hire" in the Department of Life Assurance as well as in other branches of the medical art. We are almost surprised to find that this has been challenged, though in rather an unusual mode. An esteemed correspondent of THE DOCTOR having drawn the attention of the actuary of a large company to our reports, has received from him a letter deprecating the view we have adopted. As it is desirable the exact defence of the non-paying offices last put forward should be understood, we quote the words addressed by this actuary to our correspondent. He writes thus :—

> "The Life Assurance Department of THE DOCTOR begins very badly for assurers and assurance companies, by laying it down as a rule for the guidance of the medical profession that its members are never to fill up a form for an assurance company without a fee. Now, this is an erroneous doctrine, for it very often happens that proposers, in giving reference as to health and habits to a *private friend* name a medical man, and he in some cases won't fill up a *private friend's* report form without a fee ; the result is annoyance to the proposer and the office, delay to both, and probably an ill-feeling between all the parties ; for how can the doctor expect to be friends after with a gentleman for whom he refused to do such a slight service ? or, how can he expect any business for which he would be entitled to payment from the office which he treated so unreasonably ? Any man who can read and write can fill up a *friend's* report. It is not necessary that he should be a doctor or belong to any profession, and therefore, when a doctor is asked to act for a friend in the *capacity of a friend*, I don't see that he has any right to demand a fee simply because an insurance company is in question. He might as well ask a fee for acting as reference for a friend taking a house or a farm, or entering into any engagement in which a reference would be necessary.
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> "If you think well of enlightening the profession on this matter, you may do some of them *a service*. I fear THE DOCTOR's doctrine is calculated rather to increase the evil I refer to."

Now here, be it observed, the position that a *medical* report ought not to be paid for is completely abandoned, and we are told that such a friend's report, as any one who can read and write could fill up is sometimes refused without a fee. Most medical men know the difference between a medical report and a friend's reference. Where the applicant has a right to give such reference as he would in taking a house, we can understand a doctor replying without a fee. No medical report can honestly be filled up without an examination of the patient at the time, and every office expects such examination to be carefully made, and all the numerous questions honestly answered. A friend's report is altogether different, though it is scarcely such a reference as would be required in letting a house, for it usually asks about the person's habits and apparent health. Of course, only an unskilled reply is expected, and if we consented to fill up such a form we should never think of examining the patient or asking him a question likely to elicit anything prejudicial to the applicant. We might thus fill up a certificate for a person we had never professionally attended or about whose health we had heard nothing. It is altogether different if the office applies to the doctor of the applicant, because he has already professional knowledge obtained by his attendance, and it is doubtful whether such knowledge should be sought. Any company thus attempting to obtain unfair advantage runs such a serious risk of getting a number of bad

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(*a*) Sedillot, "De l'Infection Purulente," p. 417.

(*b*) "Mémoires de Chirurgie Militaire." Tome xvi., 2ième série.

lives that we would recommend all who desire to insure to avoid that office, for it is the interest of of those insured that the company should be stable.

SYPHILITIC DISEASES OF THE BRAIN.

In the last issue of The Doctor we gave a condensed account of Dr. Broadbent's first two Lettsomian Lectures delivered before the Medical Society of London. The third and concluding lecture was devoted to syphilitic affections of the brain, meninges, and cerebral arteries. He spoke of these under several heads, and related numerous cases. Some of these, we expect, would not be regarded in the same light by other observers. We can only find space for the more important passages, showing the lecturer's views without attempting to abridge the lengthy details of the cases. Passing by syphilitic epilepsy and syphilitic affections of the meninges, we come to—

Syphilomata or Tumours.—Among the most interesting examples of syphilitic disease of the brain are those in which the morbid deposit takes the form of a distinct tumour. The symptoms common to nearly all cerebral tumours, when any symptoms at all are present, are, severe pain, vomiting, and double optic neuritis; the pain being fixed in seat or radiating from one point, but variable in intensity at different times. Cases, however, are on record in which tumours have attained a large size without giving rise to abnormal phenomena of any kind; and although the concurrence for any long time of the three symptoms mentioned would be almost conclusive of the existence of tumour, the absence of one or other would not necessarily be conclusive to the contrary. Superadded to these general symptoms may be hemiplegia, motor or sensory, if the central ganglia are involved; or paralysis of individual nerves, if the tumour is situate at the base of the brain; or convulsions, if the surface grey matter of the hemisphere is affected.

The symptom of greatest importance is unquestionably the double optic neuritis; and, as Dr. Hughlings Jackson in particular has pointed out, it may for some time be the only symptom, or, if not quite alone, may be associated with symptoms so slight as to have no significance independently of it.

We must not wait till vision begins to suffer before examining the eyes. It is with constantly renewed astonishment, notwithstanding the frequent illustrations brought forward by Dr. Jackson, that I see the extensive changes in the disc compatible with good vision.

We are as yet in uncertainty as to the immediate mode of production of optic changes, and of the chain of causation by which they are connected with tumours. It may perhaps be taken as certain that one way in which changes are produced is by increased intra-cranial pressure; and it appears probable, moreover, that this intra-cranial pressure operates through fluid being forced along the sheath of the optic nerve, between its two layers, which bulges out the sheath near the eye and compresses the nerve and its vessels. But the optic changes may be entirely absent, or, having appeared, may subside, when we have every reason to suppose, from examination after death, that intra-cranial pressure must have existed, and may be present when we can see no cause of intra-cranial pressure. If the existence of fluid in a position to be carried into the optic sheath is a condition required for the production of strangulation of the nerve, the absence of effusion in the membranes at the base of the brain may explain some cases in which optic changes have not appeared. But it is not even a settled point whether there is or is not a distinction between ischæmia of the disc, a vascular strangulation or obstruction due to intra-cranial pressure, and neuritis descendens, and inflammation propogated to the disc by the continuity of the neurilemma with the pia mater; or, admitting the distinction, whether the difference can be made out by ophthalmoscopic characters. Till this is decided we cannot so much as pass the threshold of the inquiry as to the mode of production of optic changes in diseases of the brain.

While we cannot explain satisfactorily the mode of production of optic changes, their clinical associations and significance are better known. They commonly, almost constantly, accompany tumours, in whatever part of the brain they may form, and perhaps more constantly syphilomata than any others; they usually accompany abscess; very frequently meningitis, especially inflammation of the membranes at the base of the brain; rarely hæmorrhage, unless as a consequence of consecutive inflammation; rarely embolism or thrombosis, though in one case of thrombosis I have seen the most marked optic ischæmia. They do not accompany the molecular changes—inappreciable to the naked eye, and, as a rule, even by the microscope—which give rise to epilepsy or chorea. Syphilomata usually give rise both to general symptoms and to such as aid in fixing the locality, and I do not remember to have read of a case in which an unsuspected syphilitic tumour has been found after death. This is no doubt a consequence of the fact that syphilomata affect either the surface of the hemispheres, or, if they form in the substance, it is at vascular parts, such as the central ganglia.

There is a form of affection to which Dr. Hughlings Jackson has specially called attention as frequent in connection with syphilis, and in some sort characteristic of syphilitic cerebral disease. The prominent feature in these cases is unilateral convulsions, unattended for the most part with loss of consciousness. The convulsive movements may vary in degree from a mere twitch or slight stiffening to the most violent agitation, and may be accompanied or preceded by sensations of various kinds. Usually the starting-point is constant in a given case, and very frequently this will be the thumb and index finger. Beginning here, the agitation may in one attack be confined to the upper extremity, and there may be no loss of consciousness; at another time it will invade the entire lateral half of the body, travelling up the arm to the shoulder and face, and down the leg, becoming bilateral where the nerve nuclei of the two sides are associated; or sometimes the arrival of the agitation and accompanying sensation at the head or face may be the signal for general convelsions and loss of consciousness. If the convulsive movements begin in the foot or face a similar course may be followed, and after the unilateral convulsions the limbs which have been affected may be left paralysed for a time from exhauston of the nerve force. When the hemispasm, as it has been called, is on the right side, and especially when the starting-point is the face or tongue, temporary loss of speech is very common.

Sooner or later, and very often early, optic neuritis usually comes on. Dr. Jackson has shown that this hemispasm is due to disease in the convolutions of the opposite hemisphere, almost always near the fissure of Sylvius, and has shown that particular convolutions are involved according as the convulsions begin in the hand, foot, or face; thus extending our knowledge of the localisation of function in the cortex of the brain, and giving occasion for the experiments of Dr. Ferrier, which have deservedly excited universal attention. Dr. Jackson has usually found the disease in these cases to be a syphilitic tumour, but the symptoms are of course determined by the situation and not by the nature of the growth. The frequency, however, of syphiloma in these cases will, in cases of doubtful character, be a reason for entertaining the hypothesis of syphilis as a provisional diagnosis.

I do not find many examples of unilateral convulsion in the large collection of cases af syphilitic cerebral mischief made by Zambaco, Gros, and Lancereaux, one reason being that observers have not been duly aware of the importance attaching to them. The latter authors giving the situation of syphilitic tumours in the brain, find in one case the entire cerebral mass infiltrated; in one, disseminated exudations in different parts; in six, tumours in anterior lobes; in three, in the middle lobes; in three, in the corpora striata; in three, a great part of the hemisphere.

Cerebral Diseases in Infantile Syphilis.—Cerebral affections have not been frequently met with in infantile syphilis, but a few cases are on record, and it is extremely probable that many have been considered to be examples of tubercular meningitis. If no post-mortem examination had been made, or if the post-mortem evidence had not been so conclusive, the lecturer would have been unable, either from the symptoms or from the history to pronounce the case which he here related syphilitic.

Syphilitic Thrombosis of Cerebral Arteries.—Varied and important as are the effects of syphilitic disease in the membrane and substance of the brain, not less soare the results of syphilitic disease of the cerebral arteries. Here, again, as in every part of the subject, indebtedness was acknowledged to Dr. Hughlings Jackson, who has led the way in this, as in many other investigations, and has repeatedly insisted on the importance of recognising the effects of syphilitic disease in the arteries.

The arteries of the brain in syphilis are frequently attacked by inflammation, usually beginning in the outer coat. This may lead to thrombosis, which cuts off the supply of blood, and produces the results now known to follow this event. The effects are, first, an accumulation and stagnation of blood in the capillaries in the area of distribution of the vessel blocked, and unless collateral circulation can be established there will be subsequent softening. The symptoms will depend upon the part fed by the artery which is obstructed. The lecturer was disposed to think they are more varied than those produced by embolism, since a fragment carried from valves of the heart or from the aorta, appears to find its way into certain vessels (notably the left Sylvian artery) in preference to others, while syphilitic thrombosis may occur anywhere. In identical situations the effects of thrombosis and embolism would of course be identical.

Syphilitic thrombosis must be of very frequent occurrence, judging from my own experience and from the number of cases collected by Zambaco, Gros, and Lancereaux, but set down as examples of inflammatory softening.

As to diagnosis, we have, on the one hand, to guard against the conclusion that whatever happens in a person who has suffered from syphilis is necessarily due to this disease, and on the other, to avoid being misled by the absence of an acknowledged syphilitic history or of traceable syphilitic antecedents. The period of life at which the nervous affection comes on is a great guide. In old persons, except in very obvious cases, we should arrive at a diagnosis of syphilis only after exclusion of other and more common causes of disease of the nerve-centres. In young adults syphilis would suggest itself early, unless there were heart-disease or disease of the kidneys. Our chief aid in the diagnosis, in addition to evidence of syphilitic disease in other parts, which must be carefully looked for, will be the antecedent or associated symptoms which we have learnt by experience to connect with syphilis—headache, with nocturnal exacerbations, sleeplessness, and irritability. The gradual and irregular mode of access, except in the case of thrombosis, is, again, suggestive of syphilitic disease, and convulsions are very common.

In the prognosis we have always to bear in mind the liability to relapse. Occasionally we see recoveries which are apparently complete and permanent, frequently when the symptoms have been only epileptiform attacks, and the associated nervous disturbances enumerated in speaking of syphilitic epilepsy, sometimes when there has been evidence of graver mischief, but in a large proportion of the cases the patients will enjoy immunity from similar or more serious symptoms only on condition of perseverance in the employment of the remedies. The chief considerations which bear on the prognosis are the duration, nature, and seat of the lesion. As to the duration, the longer the mischief has existed the more likely are its effects to be permanent, for although syphilitic exudations and growths are singularly amenable to the influence of remedies, if they are allowed to remain for any length of time they destroy the structures in which they are lodged; this is more particularly important in the spinal cord, in which a very limited lesion will involve the entire segment and cut off the part below from the cerebrum. It is, however, remarkable how much relief is often afforded, even after a prolonged train of disturbances, by removal of the cause, especially when the symptoms point to an affection of the cerebral hemispheres. As to the nature of the lesion, supposing it to have been determined that it is of syphilitic origin, the most important point is to distinguish between the effect of syphilitic disease in the membranes or nerve substance, and of thrombosis from syphilitic inflammation in the arteries. As Dr. Hughlings Jackson has often insisted, the result of the blocking up of an artery will be independent of the nature of the obstruction. If a collateral supply of blood does not find its way to the part, softening is inevitable, and supposing that treatment could affect the original disease, as when a cerebral artery is included in a gumma, it would probably come too late to obviate the effects. Usually, as has been stated, thrombosis gives rise to sudden attacks without much pain. Syphilitic epilepsy, so called, yields to treatment. We have here, in Dr. Jackson's language, only a discharging lesion, not a destructive one. In paralysis, on the other hand, there is frequently destruction, but recovery may be expected if we can exclude thrombosis and softening, and if the duration has not been too prolonged. The tumours which give rise to unilateral convulsion appear to be particularly liable to be attended with optic neuritis, and may wear out the patient's strength, but tumours at any part can sometimes be brought to a state of quiescence, and the effects of disseminated lesions are more serious than those produced by a single growth.

As to the *seat* of the lesion, it seems that growths from the dura mater are apparently less amenable to treatment than affections of the other membranes or of the nervous substance, probably because they are less vascular, and less easily reached and less freely acted upon by the remedies.

The treatment is simple. The one remedy is iodide of potassium, or, this failing, mercury. A few remarks on the mode of employing these brought to a close the Lettsomian Lectures for 1874.

ABOUT BOOKS.

Lessons in Laryngoscopy, including Rhinoscopy and the Diagnosis and Treatment of Diseases of the Throat. By PROSSER JAMES, M.D., M.R.C.P., Lecturer on Materia Medica and Therapeutics at the London Hospital, &c. London: Baillière, Tindall, and Cox, King William Street, Strand.

BY the physician who has studied attentively and practises successfully the science on which this accomplished author has written, and, as a consequence, justly considers himself a master of the subject, the contents of the volume will be perused with avidity, advantage, and profit; whilst the student of laryngoscopy, or the mere tyro in this luminous subject, should he feel disposed to become thoroughly grounded in all matters necessary for him to know—"from the egg to the apple"—may do so in a few quiet hours by means of what we may designate the text-book of laryngoscopy. For the work contains not only numerous tabulated illustrations and engravings of the instruments employed in laryngoscopy and rhinoscopy, but also engravings and beautifully coloured diagrams of the anatomy of the fauces, larynx, and kindred parts (in a state of health and in disease) without and with the laryngeal mirror placed *in situ*, so that the manipulator may see, examine, and practically understand the position of the fauces, epiglottis, glottis, vocal cords, Eustachian tubes, posterior nares, &c., in an amazingly short space of time, and in so effective a manner as to leave on his memory an indelible impression regarding their position and arrangement, their appearance in health and in disease, in a state of rest and in a state of activity. But the author does not stop here in his attention to the wants of the laryngoscopic tyro, for, like most practical teachers, he evidently feels impressed with the belief that more is required of him than to place before the reader pictures of the anatomical parts, and engravings of the instruments employed for the examination of, and operations on, them; consequently, Dr. Prosser James, in the accompanying concise and intelligible letterpress, describes the mode by which laryngoscopical instruments are employed—"sursum que deorsum"—and illustrates his remarks by reference also to engravings wherein are made manifest both patients and laryngoscopists in consultation, so that "he that runs may read," and should he not become an adept in the art of throat examinations the fault shall lie, we unhesitatingly affirm, not with the teacher.

And here let us state that the chapter on Rhinoscopy gives a clear and a concise view of the subject—indeed, we consider ourselves justified in observing that the chapter on Rhinoscopy, and the coloured plates that illustrate it, are superior to any ever before produced. We recommend to our readers their attentive perusal.

Within the circumscribed limits of a few chapters, Dr. Prosser James has compressed the pith of all that has been written, both at home and abroad, on general therapeutics as applicable to the treatment of diseases of the throat, and with them gives us an illustration of the simple and effective atomiser associated with his name. In this portion, too, of the arduous task undertaken by him, we recognise the characteristic traits of the accomplished physician, that, having a predisposition for the study and elucidation of a single branch of our art, displays a knowledge comprehensive and exhaustive of the whole.

The first chapter of "Lessons on Laryngoscopy" Dr. James devotes to the early use of mirrors by dentists, apparatus, shapes of laryngeal mirrors, lamps, and light-concentrators; and from a perusal of this chapter we are pleased to find that a large share of the civilised section of the human race—the "dentally imperfect" share of it—deserves at our hands a passing word of—shall we say—gratitude, for, were the benign benefits derivable from dental manipulation never required, and that the art of dentistry did not exist, laryngeal mirrors might have remained for ages amongst the things that are to come; nor ought we to refuse our meed of thanks to the members of the dental craft.

> "That straightens awry faces,
> That makes old maids look new,
> That every sorrow chases,
> And sweet repose gives too."

The second chapter of the work treats of the practice of laryngoscopy, and in it the student or tyro will find much valuable practical information and hints regarding the relative position of his patient and himself during examination, including passages on the control of the tongue, depressors, warming the mirrors, &c.. Writing of the latter the author states: "The mirror, when warm, should be carried boldly forward into the fauces, particular care being taken not to touch the tongue, as that will be likely to excite retching. The posterior surface of the mirror should push the uvula *without hesitation* somewhat backwards and upwards. There is no fear that this will cause irritation, while a trembling, hesitating way of holding it only produces an unbearable tickling. The throat is far more tolerant of the contact of instruments thus suddenly pressing against it than of the vibrations of a body held unsteadily. Of course, force is not needed, but some degree of pressure is less intolerable than tickling." The truth of this quotation we heartily substantiate, having frequently found much of the irritation alluded to depart the moment we boldly—yet gently—placed the laryngeal mirror in the vicinity of the posterior wall of the fauces.

But why should we attempt to give quotations from a work wherein every page displays a keen knowledge of the subject? with such a proceeding, certainly, he that desires to know the science of laryngoscopy would scarcely feel satisfied, for the letter-press and the engravings and plates are so affiliated that by parting them we diminish the utility of all.

Following up his subject, Dr. James explains the laryngeal image, vocal cords, larynx, trachea, bronchi, their deviations—abnormal and otherwise—tracheotomy, auto-laryngoscopy, the several modes for self-examination, and the simple rules to be adopted for the purpose; rhinoscopy, reflected light, the angle of the rhinoscope, and the modes to be adopted for obviating the difficulties that are sometimes met with in rhinoscopic examinations; here, too, auto-rhinoscopy, pharyngoscopy, and œsophagoscopy have been glanced at. Subsequently, the author quotes authorities and gives many chapters on laryngeal diseases and their treatment (operative and medical) and the instruments and remedies to be employed for their palliation or cure, including inhalations, the application of atomised fluids by means of the atomiser, electricity, &c., &c.

Let us note the very praiseworthy endeavour of the author of "Lessons in Laryngoscopy" to place before the reader the relative points of interest that bear upon the history of the science from the first known and isolated application of the laryngoscope in the primitive crudity of a new discovery down to the present time, and the care taken by the author in order that he may give us a knowledge of the long list of observers that assisted in its development—from Babington to Czermak, Türck to Johnson, Mackenzie, James and Marcet, &c. The list is a long and formidable one, and will be found an interesting study.

Incorporated in the work we find there is a scientific and literary curiosity, namely, a copy of Signor Garcia's original "Observations on the Human Voice," as reported from the proceedings of the Royal Society of London in 1855, from which time may be dated the first recognised standpoint in the science of laryngoscopy.

The publishers are, Messrs. Baillière, Tindall, and Cox, King William Street, in whose judicious hands we hope shortly to see placed a second edition, enlarged and still more profusely illustrated; meantime, hope deferred in this case cannot possibly lead to cardiac derangement, for the price of "Lessons in Laryngoscopy" is moderate, its letter-press fluent, incisive, and comprehensive, its coloured plates well worth the price of the volume, which, *per se*, is neither unwieldy nor burthensome—*utile dulci*.

R. Locke Johnson.

Observations on the Pathology and Treatment of Cholera; the Result of Forty Years' Experience. By John Murray, M.D., Inspector-General of Hospitals; late of Bengal. London: Smith, Elder, & Co.

For many years the name of Dr. John Murray has been familiar to medical officers in India; for many years he has been an enthusiastic worker in regard to questions affecting the health of our forces in that country; his own opinions have always been strongly expressed, and, whatever weight was accorded to them, no one ever doubted that they were carefully and laboriously arrived at.

In the little book before us, Dr. Murray observes that, although much has been written on the history, causes, and pathology of the disease, little has been said about the treatment. In this we perfectly agree with him, for really it would seem, from nine-tenths of the reports, articles, and so on, that treat of cholera, that the means by which the lives of persons affected with it can be saved is about the last thing thought of, and the importance in which they are held insignificant as compared to abstract theories in regard to the origin and propagation of the malady, the precise manner in which it kills, the microscopic appearances presented by discharges and tissues of its victim, &c. He tells us that among the peculiarities of the disease is the suddenness of the change to antagonistic symptoms, indicating opposite remedies or modes of treatment, and observes that in ague there are analogous sudden changes, thus pointing out a resemblance often remarked between these two diseases as they occur in India. With all due deference, however, we would take exception to the principle laid down that the treatment during individual stages should be modified by the symptoms which are to be *anticipated* in subsequent stages. The whole progress of attack is so rapid that the great difficulty is to combat sufficiently quickly indications as they arise. In every case of the disease the battle comes to be literally who shall win, the physician or the malady, and any delay or indecision on the part of the former will but give so much advantage to the latter. His observations in regard to the danger of giving rise to consecutive fever by over-stimulation and the use of opium are in accord with the experience of all old officers in India, many of whom had absolutely eschewed the use of opium more than twenty years ago.

He considers that the disease is caused by the presence of the cholera poison in the system, but wisely avoids the inquiry what that poison is. He believes that health cannot be restored till that poison is removed or destroyed. The first effect produced by the *poison* when received into the system is *malaise*, and this feeling, when it occurs during the existence of cholera, is therefore never to be neglected. The poison may at this stage be removed by remedies, the elimination taking place through the excreting organs, and the author considers that it may by proper means be eliminated even before it has produced its characteristic symptoms, such elimination being brought about by good air and food, removal it may be from an infected to a healthy locality, by stimulants during meals, although he observes "they are objectionable on an empty stomach," a point on which we are by no means so sure as Dr. Murray seems to be. He admits, however, that "during an epidemic of cholera it is not safe entirely to cease the use of spirits when too large an indulgence in them has been the habit," and adds, "spices and aromatic stimulants are useful, and not dangerous, and even the idea of using some remedy does good." He recommends the use of quinine in the early stages; he has employed it in his own person, and goes so far as to consider the neglect of it culpable. With the occurrence of diarrhœa, he considers the second stage to have begun. He describes the ordinary characters of this period of the disease, and condemns the use of purgatives, with the object so often assigned, of "assisting nature," adding that during epidemics of cholera—and he might have said also at all other times, in India—purgatives, more especially saline, are dangerous. In this stage he would soothe the bowels and *stop* the diarrhœa—the latter we fear more easily said than done. If the contents of the intestines consist of undigested food, he would begin by giving castor-oil and opium, notwithstanding his previously stated objection to purgatives. The remedy in which he has most confidence is an anodyne carminative, composed of opium, black pepper, and assafœtida, given with a little cold water after every second stool; but if we remember aright, these pills found no favour when used in the cases of men suffering from cholera in Gwalior, which station was then under Dr. Murray's superintendence; nor can we quite approve of the plan by which remedies are only given after every second stool in a disease which runs its course with the rapidity that cholera does. He dwells upon the importance of early treatment, and recommends the practice adopted in India of a supply of such medicines as are intended for first use being retained by a non-commissioned officer in barracks. "Quack medicines," he says with truth, "are agreeable, expensive, and not generally to be relied on." Astringents, as acetate of lead, gallic acid, and sulphate of iron are "useless, if not injurious," but among this class he does not include medicines which restrict the number of evacuations by removing spasm or relieving pain. Relapses are to be guarded against, and with this view calomel and opium, cholera pills, and castor-oil, with careful diet, are recommended, and quinine in small doses besides restoring the appetite, acts further as a prophylactic during the rainy season.

Dr. Murray alludes to what he calls a periodical type of the disease, to which he gives the name of the *Malwa* sweating sickness, and in which quinine in large doses, with opium, is the sheet-anchor of success, no doubt because the fever so-called is closely allied to intermittent fever. He considers that as the germs of the disease are capable of being disseminated, all evacuations of, and articles used by those affected must be disinfected. With regard to the third stage, or that of collapse, he divides it into three periods: in the first "the indications of treatment are to alleviate the symptoms," as indeed should be done at any and every period of the attack; small quantities of iced water to be given at intervals; but we fear the additions he recommends of "an acid, either sulphuric or acetic, alternated with an alkali, either carbonate of ammonia or soda," scarcely constitute what is called "heroic" treatment, especially if besides the sulphuric and acetic acid, and the carbonate of ammonia or soda, his further recommendation is followed, that "the less alcohol that is given the better." Again, with much deference, we are at a loss as to what is meant when he observes that, "when the hour of exacerbation approaches, which may be anticipated at intervals of twelve hours," and in which he would give quinine. We really fear that Dr. Murray has become "infected" by the so-called *science* of certain doctrinaires, and verily believe that twenty or five-and-twenty years ago, when, by the way, the relative mortality by cholera was far smaller than it has been of late, he recognised the fact that one "interval of twelve hours" quite decided the question whether or not the primary symptoms were checked. Indeed this belief is confirmed when we read a page further on, that "the treatment here recommended is in a great measure expectant." Of what? we would ask. Everybody knows what to expect in a case of cholera unchecked—namely, Death; and the true aim of treatment ought to be to avert this expectation. This, we take it, is likely to be effected in some measure at least by the next remedies he recommends—namely, "camphor and ammonia, which stimulate the stomach without tending to the suppression of any of its secretions." Notwithstanding his objection to "alcohol," also he observes that the accounts of the favourable results of the exhibition of alcoholic solution of camphor "with decoction of pepper or chillies are authenticated by unquestionable medical authorities." They are so, and we recommend the practice as a decided improvement upon the "sulphuric or acetic acid" with "carbonate of ammonia or soda." Considering the long experience and high reputation of Dr. Murray, his statements in regard to the advantages of hot saline enemata deserve respectful attention. It is no doubt true that benefit is obtained in some instances, although, as he himself confesses, in many "this remedy is powerless to save life, although it relieves the sufferings from cramps."

Observing that in fatal cases there has been an absence of bile in the intestines, although the gall-bladder was distended, Dr. Murray records some instances in which the administration of pepsine was successfully adopted. We do not, however, put much faith in the experiments related by him in which the action of bile on the lower vitalities which abound and are developed in cholera evacuations was immediately to arrest their action or vitality. Indeed, we only partially comprehend what is intended to be conveyed by the statement. Among external measures to be employed, Dr. Murray enumerates hot baths, air-baths, fomentations, and friction. He has never seen cold affusion employed; we have, and we declare it to be useless. The practice of bleeding he considers dangerous and useless. In former days what must be considered very remarkable recoveries did sometimes take place after it had been practised.

In the second degree, "voluntary life is impaired, and involuntary life is flickering." This really is on a par with the very latest "competitive" science. We gather, however, that "the functions of the lungs are imperfectly performed, and the heart acts feebly." The intellect is clear; the eyes congested and sunken; countenance livid, with a peculiar pinched expression; breath and tongue cold, and the voice a whisper. Who that has seen cholera does not recognise the vividness of the description? Dr. Murray, however, adds to the list, and having done so, tells us that "in this degree" "many recover in every wide-spread epidemic where the only remedy used" "is cold water." Is it really so? What becomes of all the "lower vitalities" and the animalculæ we read about only three pages back? Is medicine a reality, or is it a sham? We are puzzled. This degree is complicated with a more vitiated state of the blood than the previous, caused by the accumulation of impurities, and remedies are less powerful than in the preceding. The occurrence of sleep should be promoted; many patients ought not to be assembled in the same ward, nor ought they to be moved from one place to another. The watery extract of fresh meat, soups and jellies, arrowroot or sago, with a little milk or brandy, are also recommended. Calomel is inert until reaction has begun, after which in small quantities it is generally useful. Opium, even in small doses, in the stage of collapse is questionable, and in large doses most dangerous. As to chloroform and chlorodyne, "in those cases where reaction comes on after their free use the head symptoms are often violent and uncontrollable," and "the same danger applies to the use of alcohol" in large doses; but no such objection exists with regard to camphor and ammonia. Dr. Murray is favourable to the use of blisters and sinapisms. He alludes also to the hypodermic injection of various remedies, and among them quassia; but does not stop to relate the extraordinary *craze*—for really it was nothing better—with which, some thirty-five years ago, this plan was pursued by Dr. Honigberger, Physician to Runjit Singh. Of course, the futility of the measure became apparent after it had a certain "run." Other substances have been so injected, as chlorate of potass, morphia, and quinine, but with the result that neither Dr. Murray nor any one else has "heard of any success from this plan." The treatment he recommends in this stage includes palliative cold drinks, to which a little salt has been added, hot saline enemata, hot applications, friction with turpentine liniments, and counter-irritation, together with a little quinine, to which he seems to be extremely partial. He guards against permitting patients to stand or sit up, either being often followed by fatal syncope.

In the third or advanced degree of collapse "the powers of voluntary life are very low, and those of involuntary life are paralysed." Reaction is rare, and recovery after it uncertain; still, it does take place. When such an issue happens, it is preceded by subsidence of restlessness and of epigastric pain, and by the appearance of bile in the evacuations. It was the custom among a few at one time to inject large quantities of saline fluid into the veins in this stage, but with no permanent good result. Dr. Murray has, however, used successfully frequent small quantities of iced water with soda or carbonate of ammonia, quinine, saline enemata, external heat, and frictions. Vomiting and purging often cease for some hours before death, and their recurrence is a favourable sign. Some cases reach this extreme stage within one or two hours from the first appearance of the active symptoms, but the ordinary time is four or six hours. Of the fatal cases at Agra in 1856, 35 per cent. died under twelve hours, 70 per cent. under twenty-four hours, and of all attacked 42 per cent. died. This is about the usual rate of mortality by the disease in late years.

Dr. Murray describes the symptoms which follow reaction after collapse as being very serious. They consist of frequent evacuations of dark matters, uræmia, low typhoid, and delirium. The treatment in such cases depends upon whether the cholera poison remains in, or has been eliminated from the system. In the former case he seems to recommend blood-letting, dry cupping, sinapisms, pure air, calomel, ipecacuan, chlorate of potass and quinine, and the application of ice to the head. The functions of the kidneys being suppressed during the attack of cholera, "the hope of cure rests on the restoration of the functions of the kidneys," for it is essential to recovery that the urea be eliminated from the blood. To accomplish this, however, "is one of the most difficult tasks that try the skill of the physician." The author gives the usual account of post-mortem appearances, adding, however, the very sensible and necessary remark that such appearances are not the cause, but effect of the disease. In slight cases convalescence is rapid; but in some the patient becomes affected with "boils all over the body." As means of recovery, change of air, a sea voyage, and the use of natural mineral waters, are all recommended.

On the subject of general measures to be taken during an epidemic, Dr. Murray offers various remarks, the result of his own great experience. The primary source of the disease he considers to be the human body, so patients should be treated "apart from the crowd, in special hospitals, and by special attendants." Large numbers should not be treated in one room, and in India tents, each containing four patients, are more suitable for such cases than regular buildings. In this country, however, he would substitute huts. Nor would he permit patients to be treated in their own houses. He finally points out that in all towns arrangements ought to be made before an epidemic occurs, instead of, as is too often the case, after it has appeared. Altogether, the *brochure* by Dr. Murray is, in regard to cholera, the "hap'orth of bread" of sound sense and practical experience as compared to "all this sack" that has lately been thrust before us by men full of theories and *science*, but who would be somewhat floored were they called upon to *treat* a number of patients affected with true epidemic cholera.

The Medical Adviser in Life Assurance. By Edward Henry Sieveking, M.D. London: J. and A. Churchill. 1874.

A manual such as the above was very much required, for with the exception of the late Dr. Brinton's little work, and isolated and scattered papers in the various medical journals, we had no reliable work on the subject. The importance of life assurance in a medical aspect cannot be over estimated, for chiefly upon the medical examiners, report the office forms the opinion of the suitability of the risk. The Doctor, as our readers are aware, has opened its pages to a Department on Life Assurance, and is the first medical journal in Europe that has done so. During last year the *New York Medical Record* commenced a series of valuable papers on this subject by different writers, and which we regret that our author has not noticed. Dr. Sieveking is perfectly correct when he states that—

> "An insurance company cannot conduct a safe business unless it is able to restrict its mortality within the rate provided, and defray its expenses out of this margin allowed for that purpose in the absence of exceptional sources of profit. It is therefore in the interest of all policy holders, both for their security and profit, that the company should use every reasonable precaution to see that the basis of the contract on the part of the insuree is unimpeachable, just as it is the interest of the latter to ascertain that the company with which he proposes to insure will at any time be able to fulfil its share of the contract, and pay the claim when it falls due."

Our author gives us a very good chapter on "The Normal Man," in which he touches on the subject of spirometry. We, for our part, have never put much belief in the spirometer, as the forced inspiration taken before it is used must be fallacious as regards the test of vital capacity of the lungs; and again, the amount of air in the lungs of any two persons, even if of same weight and height, is never the same. The duties of the medical examiner, as our author states, are of a very responsible character, and we have long held the opinion that it is a mistake on the part of the offices not to appoint a physician as chief medical officer in each large town, who has studied life assurance in all its bearings, and would be a "specialist," so to speak, in this department. We are glad to see that our author gives great attention to the family history of the applicant, for most assuredly the inherited condition of the insuree is to be specially noted, and inherited disease, notably phthisis, usually appears at about the same age in the inheritor as it did in the person from whom it was inherited. In some cases it even occurs earlier. It is well-known that children resemble in outward appearance, manner, even peculiarities—one of either parents, and it is not too much to assume, that in addition to this resemblance externally, there will be a similar resemblance and liability of constitution to disease. Girls, as a rule, take after the father, and boys after the mother. Dr. Sieveking gives very valuable information on the "Insuree's Liability to Disease," which with our limited space we could do but scant justice to, so prefer to call the attention of our readers to this chapter; nor does our author forget to treat about the vexed question of medical fees (page 68), which, as is well-known, has given rise to much controversy.

We have great satisfaction in recommending this work to our readers, as it will be perused with not only profit, but pleasure.

H. S. Purdon.

Diseases of the Skin: Twenty-four Letters on the Principles and Practice of Cutaneous Medicine. By Henry Evans Cauty. London: J. & A. Churchill.

We are glad that provincial surgeons of extensive experience, such as Mr. Cauty has acquired at the Liverpool Dispensary for Skin Diseases, should not hesitate to give the profession the benefit of their views on the nature and treatment of cutaneous affections. The author has arranged his work into twenty-four letters, and which are chiefly of a practical nature, and we agree with him that plates, even when well executed and carefully coloured, are of little use in studying diseases of the skin; they not only fail to give the idea of humidity, which is a feature in many cases; indeed, we hold that skin diseases can only be studied like anatomy—viz., by actual observation.

The author states (page 5) that the three great additions to the means of cure of skin diseases have been—glycerine, introduced by Startin; calomel baths, by Henry Lee; and the articles on arsenic and mercury, by Hunt—all English. No doubt British dermatologists have always been most successful practitioners, but we must not ignore the labours of our continental brethren in derma-pathology, upon which foundation only can a correct treatment be built.

Writing on eczema, we have the author following pretty much the German idea that lichen, impetigo, &c., are merely stages of the same complaint. He says (page 20):

> "All the above forms of disease are so interwoven in their cause, course, and treatment, that to do them justice they must be treated as a whole. It would be much more convenient, if possible, to range each one into a separate class and to affix to each a separate cause and individual course of treatment; but this is entirely impossible, as the same symptoms arise from different causes, and you will find that whilst many writers have decried the habit of applying compound words, such as impetiginous eczema to an exudation which presents the characters of the supposed two classes of impetigo and eczema, yet, any improvement which has been suggested has lacked the boldness of declaring them *all one affection* (the italics are our own), changed sometimes by external causes whose action can easily be traced by locality where the conditions clearly point out the reason, by duration and by internal agencies with which, if we are not sufficiently acquainted, our knowledge must be increased, not by external observations, but by post-mortem enquiries."

We have only to say in reply to the above that the late Dr. A. B. Buchanan, of Glasgow, in the *Edin. Med. Journ.*, Jan., 1863, published a paper in which he clearly showed that eczematous inflammations were *selective*, the lesions being concentrated at certain vascular points, and that the varieties of eczema are expressive of stages that would occur one after another in an ideal case. Thus, at the commencement, we have a *localised macule* (Ec. erythematodes), the macule passes into a *papule* (lichen), the papules into a *vesicle* (Ec. vesiculorum), or into a *pustule* (impetigo); then the skin becomes infiltrated, while the secretion, if there has been any, dries up and the whole process terminates with *desquamation* (Ec. squamosum). Some of these forms may be assumed at the beginning, or they may follow one another with a regularity more or less complete and represent ideal stages. But to return, acne rosacea, which some look on as a form of eczema, is, our author thinks, best treated by the destruction of any prominent large capillaries by the actual cautery (page 263) applied as a platina point heated to whiteness by galvanism. When distinct hypertrophy takes place "excision is the only remedy."

The work throughout contains much that will interest the reader, and abounds with many valuable practical hints on treatment. We have much pleasure in recommending it.

H. L. PURDON.

Fruits and Farinacea, the Proper Food of Man. Edited by Emeritus Prof. FRANCIS W. NEWMAN. Manchester: John Heywood.

THE first edition of this work (the preface states) was published in 1845, and dedicated to Dr. Wm. Lambe, an aged physician and a veteran in vegetarian practice. The *brochure* brings forward many arguments in favour of a purely vegetable diet, and by those who cannot accept them will repay perusal, as it is an interesting little volume.

The Domestic Management of Children. By P. M. BRAIDWOOD, M.D. London: Smith, Elder, and Co.

THIS is just the kind of handy, concise, plain-spoken little work required for the nursery and for mothers. We have perused it with pleasure and are greatly gratified with the way in which Dr. Braidwood has executed his task.

AT THE SOCIETIES.

Pacatior philosophorum oratio, oratorum pugnacior—CIC.

AT THE ROYAL MEDICAL AND CHIRURGICAL SOCIETY,

ON TUESDAY, JANUARY 27TH, 1874,

DR. C. J. B. WILLIAMS, F.R.S., President, in the Chair.

A SECOND communication by Dr. JOHN HARLEY was read,

ON THE USES OF CONIUM IN DISORDERS OF MUSCULAR MOVEMENT.

Mr. JOHN WOOD showed

TWO CASES OF COMPLETE ECTOPIA VESICÆ WITH EPISPADIAS,

which had been operated on with success by his plastic method. The patients were brothers, aged eighteen and twelve years respectively. The elder had a very wide interval between the pubic bones, the superior rami being separated of the extent of five inches, leaving a large mucous surface to the bladder and the orifices of the ureters uncovered, and discharging blood and mucus. The younger was a smaller and more favourable case. Two plastic operations had been performed on each in King's College Hospital. The first consisted of a reversed flap of skin taken from the umbilica region, large enough to cover the exposed bladder, and turned down with its skin surface towards the mucous membrane. The skin of the flap was in this situation quite devoid of hair, as is usual in these cases. Two other flaps of a lancet shape were then taken, one from each groin, with the bases downwards, and placed upon the raw surface of the reversed flap. They were held together by harelip-pins and wire sutures. The second operation was effected by the transplantation of the anterior three-fourths of the scrotum from below the malformed penis to its upper surface, covering in the urethral epispadiac groove and forming a very complete prepuce, through and under which the urine flows, and completely enveloping the glans penis above and at the sides. The elder patient had had two attacks of erysipelas during the treatment, which prolonged the period of convalescence and necessitated his leaving the hospital for an interval. The younger, who was treated at the same time, proved somewhat intractable in the insertion and management of the india-rubber tube used in the after-dressings. The result was, in his case, a small slough at the point of junction of the flaps transplanted at the second operation, which left a fistulous opening. Upon this two operations of a minor and trifling character have been since performed, and it is now nearly healed and contracted to a small chink. With this exception the parts are all soundly healed, and are being gradually braced up and rendered more resisting by the contraction following the operation. The patients are about, have made a shield to fix on to the restored penis, and an india-rubber urinal attached, fastened to the leg like a railway urinal, an instrument which, in other cases operated on by Mr. Wood, has kept the patient dry and comfortable.

TUESDAY, FEB. 10TH, 1874.

DR. A. WHYTE BARCLAY, Vice-President, in the Chair.

NOTE ON CHOLERA.

BY J. R. N. HENNESSEY, F.R.A.S.,

Deputy-Superintendent of the Great Trigonometrical Survey;

AND

G. G. MACLAREN, M.D.,

Civil Surgeon in Medical Charge of Dehra Doon, N.W Provinces of India.

THE authors of the paper first described the geographical position of the town of Dehra between the Sivalik and Himalaya Mountains, the parts of it occupied by the native population (who are under the medical care of Dr. Maclaren), and the civil station where the Europeans reside. The meteorological observatory of Mr. Hennessey lies midway in the district along which the main road from the low country passes to the sanatorium of Mussoorie.

The first case of cholera that occurred in the summer of 1872 was that of a student passing through Dehra on his way to Mussoorie, where he died on July 8th. The first case in a resident of Dehra, who had not been in the way of infection except as residing near the main road along which the student passed, occurred on the 12th of the same month. Three days later other patients presented themselves for treatment, and the disease progressed till September. Its course was indicated in a table of curves, which was shown at the meeting. One special case was related of a poor Eurasian family living near the main road, most of whom died from their obstinacy in returning to the affected house after removal. Though so near to Dehra, and in uninterrupted communication with it, Mussoorie and Landour on the ridge of the hills, enjoyed almost complete immunity from the attack.

The diagram referred to above consisted of curves showing the number of attacks each day, the daily deaths and recoveries, and the ultimate number of deaths and recoveries among each day's admissions. On comparing these curves with the Meteorological Register of the Observatory, no corresponding fluctuations were discovered (a complete calm having prevailed), except in the "elastic force of vapour," the curve of which had a singular coincidence with the sudden rises and falls of the other curves, rising with the recoveries as marked in them. The authors referred to their diagram as indicating that the curve of cholera-attacks rapidly rises to a maximum, and then falls as rapidly or descends gradually to zero; and also as accounting for the fact that any so-called specific discovered when the tide is ebbing may prove useless when applied while the curve is rising in a succeeding epidemic.

After alluding to some spectroscopic experiments on cholera evacuations, the authors summarised a few facts connected with the question of infection in favour of the choleraic poison having no vitality, and of an imported cholera patient having no power to infect others except in the presence of the required atmospheric conditions.

ON THE TREATMENT OF RICKETY DEFORMITIES OF THE LEGS BY OPERATION.

By Howard Marsh, F.R.C.S.,

Assistant-surgeon to St. Bartholomew's Hospital and to the Hospital for Sick Children.

The author gave an account of four cases of rickety deformity of the legs which he had treated by operation. In two of them the curvature was outwards, in one outwards and forwards, and in one almost directly forwards.

In the first three cases a tendon knife was passed down to the tibia, where the concavity of the curve was greatest, and the periosteum was divided transversely. A fine saw was next introduced, and the bone partially divided, and then, by a somewhat suddenly-applied force, snapped across; the fibula was either bent or broken, and in one of the operations the tendo Achillis was cut.

In the two cases in which the curvature was outwards the legs are now straight; in the boy whose curvative was outwards and forwards, and in whom the treatment was interrupted by an attack of scarlet fever, the deformity, although much diminished, is not wholly removed. In none of the patients was the operation followed by any serious symptom, and, except in the boy who had scarlet fever, convalescence was complete in about a month. In him it was complete in about six weeks.

In the fourth case, in which the bones of the legs were curved almost directly forwards, and in which the deformity was so extreme that the boy could walk only a few steps at a time, a wedge of bone was taken out of the tibia with a chain saw, the tendo Achillis was cut, and the fibula broken in one leg and cut with bone forceps in the other. These operations, which were performed, the one on April 8th, the other on Oct. 4th, 1874, were not followed by any dangerous symptoms, but small discs of bone became necrosed and were slowly separated from the cut ends of the tibia. Union was firm in one leg in three months; in the other, in which it was much delayed by the tedious separation of the necrosed portions of bone, in six months. The legs are now straight, and the boy walks without impediment.

The paper was illustrated by photographs and casts of the limbs before operation, and the cases were shown.

MEDICAL SOCIETY OF LONDON.

January 26th, 1874.

Mr. W. Spencer Watson read the report of

A CASE OF NEURO-PARALYTIC HEPATITIS,

and exhibited the patient, a delicate, scrofulous woman, married. After a fit of insensibility, had facial paralysis and deafness of the same side, with paresis of the fifth pair of nerves. Shortly afterwards some exposure to cold was followed by inflammation and ulceration of the cornea. Mr. Watson who then saw the patient, treated her with tonics, and kept the eyelids closed by means of sticking-plaister. Under this treatment the cornea healed, and some amount of vision was retained. The lesion of the facial, auditory, and trifacial nerves, due no doubt to some intra-cranial deposit near the pons variolii, but not in it, was still persistent. Mr. Watson considered the case as confirmatory of Snelling's well-known experiments, and illustrated the necessity for three factors to cause the disease in the cornea: 1st. Loss of sensibility; 2nd. Loss of reflex irritability; 3rd. An external irritant.

Mr. Brudenell Carter thought these cases depended more on the change in the nerve tissue than on exposure of the cornea to air, dust, &c., and he was very strongly of opinion that they were generally of a syphilitic nature.

Dr. Hughlings Jackson showed

A LARGE COLOURED DRAWING

by Mr. Ambrose Kibbler, Resident Medical Officer of the London Hospital, of the optic disc of the right eye of a patient who was the subject of an ophthalmic demonstration by Mr. Carter a few nights previous. It showed much swelling of the disc, many small hæmorrhages, and yet, this was the point of the case, the patient could, at the time the sketch was made (November), read the smallest test-types, as he can now.

Mr. Hutchinson brought forward a

CASE OF SYPHILITIC NECROSIS AND ULCERATION,

showing the patient, and the artificial restoration of the lost parts. The disease had resulted in the destruction of the superior maxilla (save a small part in the region of the antrum), the cornea, most of the ethmoid, all the spongy bones, and also of the soft parts, including the nose, some of the cheek, the upper lip, and nearly all the soft palate. A rhino-plastic operation being deemed impracticable, the case was treated mechanically. To supply the lost parts internally an apparatus was constructed of vulcanite, bearing mineral teeth, which articulate with those of the lower jaw, and this was held in position by the vulcanite being adapted to the whole of the inner surface of the nasal fossæ, thus affording a hold by means of suction. For the sake of lightness the whole of the apparatus was hollow; the outer surface was coated with soft gutta percha and rested successively on the following parts: On each side, the nasal wall of the antrum and the lachrymal bones; above, on the horizontal plate of the ethmoid; behind, on the basilar process of the sphenoid and the posterior wall of the pharynx; the floor of the artificial piece formed the roof of the mouth. Mr. Hutchinson had also made an artificial nose of vulcanite. This was fixed to the man's face by an elastic band which passed round the head. The junction was partially hidden by means of a moustache fixed to the upper lip, which was also artificial. Mr. Hutchinson commented on the fact that the man's occupation, (he was a mason), and his position in life compelled him to treat the case in the simplest manner possible. The various delicate improvements in the shade of colour, mode of attachment, and usefulness in mastication, being only possible in the case of persons in a higher sphere of life, who would appreciate and practise delicacy of manipulation. The patient's residence, in a remote part of Wales, precluded any but the most practical treatment, and that least likely to get out of order. He also pointed out the interesting fact that the sense of smell was present while the artificial nose was worn, but was entirely absent when it was not applied to the face.

Mr. Sewill described a mechanical contrivance for the relief of cleft palate.

Mr. Pennefather showed some specimens of aural polypi and a new instrument for removing them. He also showed a very ingenious instrument for introducing an artificial tympanum.

The report prepared by Dr. Port and Mr. Henry de Meric on the

DEFORMED FŒTUS,

sent by Dr. Diver, was then read by Dr. Port, and was as follows:—

Mr. President and Gentlemen,—The specimen of an encephalus which Mr. Henry de Méric and I had the honour of examining for the Society shows the following characteristics: The cranium and special canal are fissured in their whole extent. Of the spinal cord nothing at all could be distinguished. Of the brain, only rudiments which adhered to the torn sac, formed by the meninges. On the other hand, all the cranial and spinal nerves were well-formed. No other malformation could be found out, except those dependent on the abnormal accumulation of cerebro-spinal serum. The gentlemen who saw the fœtus a fortnight ago must have been struck by its curious shape, the face turned upwards, the large eyes, the backward inclination of the forehead, the well-developed jaws, the neck arched forward, giving to this monster the appearance of having a large goitre. We have cut out the skull and spine to show which were the anomalies in the skeleton that brought about the before-mentioned deformities.

You see that the flat bones of the skull hardly exist, that the basis of the cranium is very much shortened, and that there is a strong flexion between the pterygoid bone and the os occiput. It looks as if the upper part of the cranium had been sawn off, at the same time the base is not concave, but rather plane and even slightly convex. Of the frontal bone the nasal portion is well-developed; of the frontal part there is only a small margin to be seen. We could not detect anything of the parietal bones. The pterygoid bone is extremely small; the petrosal bones are comparatively large. The only existing part of the occipital bone is its basilar portion. If you regard the open cavity of the skull as a whole it seems as if a force had acted from within in all directions, had torn asunder part of the cranium, and partly destroyed the bones or shifted them sideways. The spinal canal is freely exposed; there being no posterior arch, it does not look like a semi-canal, but is plane. The spine, regarded as a whole, shows a strong curvature, the cervical part being much turned forwards, the upper dorsal backwards. At the same time the cervical vertebræ seem to have been arrested in their growth. Among the malformations that are brought about during the fœtal life by abnormal accumulation of the cerebro-spinal fluid there are three species to be distinguished. In the first there is an abnormal quantity of serum, but the brain, spinal-cord, and its bones remain closed (hydrocephalus, hydro-rhachis). Secondly. There is a permanent accumulation of serum at certain parts, and then the canal gets fissured and the brain or cord collapses (hydrocephalocele, hydromyocele). Thirdly The original accumulation of serum was so great that the consequence is a permanent fissure of the whole cerebro-spinal canal, with more or less destruction of the brain and spinal marrow (cranioschisis, rachischisis). Our case belongs to the last.

The President then showed a

HEART WITH AORTIC DISEASE,

one of these valves being thickened and everted. The patient, a butcher, æt. 19, had suffered from acute dropsy, pericarditis, and double pleuritic effusion, and on July 15th the dyspnœa was so urgent that paracentesis was performed in the sixth left intercostal space, and about three pints of serum removed. There was gradual improvement up to the 12th August, and on the 19th the patient went to a convalescent hospital. On leaving he went back to his work, and continued better in health till three weeks ago, when he had sore-throat. He continued at his work for another fortnight, when pain in the region of the heart, and on the right side of the chest, and also on the left arm came on, accompanied with great dyspnœa. On admission he had a pale and anxious expression, and there was urgent dyspnœa. The abdomen was full and tense, and the hepatic dulness was increased. There was continued cough, especially at night; sputum thin and frothy. The breath sounds were normal; the hepatic dulness was from the fourth to the sixth ribs. A distinct double bruit was audible over the aortic valves and in the course of the aorta; but at the apex of the heart and to the left of the nipple it was difficult to distinguish the precise time of the cardiac murmur; a soft systolic murmur was synchronous with the cardiac impulse, and was followed by a louder bruit. The latter sound was thought by some to be synchronous with the pulsation of the carotid. The pulse was regular, 116; respiration, 60; urine 34 oz., sp. gr. 1·016, free from albumen and sugar. Infusion of digitalis ʒi, in the carbonate of ammonia mixture, and a small quantity of brandy was given. On Jan. 1st, he did not sleep on account of the flatulent distension of the abdomen, but there was less cough and less pain; pulse 116; respiration 56; temperature 99·6°. Ether, with sp. chlo. and camp., were given. On the 6th he had not improved; respiration 64; pulse 128; he was ordered, tinct. digitalis and senega mixt. (Grey's Phar.) On the evening of the 9th he was better than usual; had been playing at draughts, and went to sleep comfortably, but awoke about 10 p.m. in great distress; breathing most distressing; respiration 100 per minute; he died the following morning.

Autopsy.—On the 10th there was some effusion into both pleural cavities—one or two pints; lower lobes of the lungs red, fleshy, and compressed; the pericardium adherent. Aortic valves—one valve thickened and everted; the double crescents much thickened, ventricle dilated and much hypertrophied; mitral not enlarged; some small vegetations on the auricular side; weight of heart, 16 oz.; liver congested and fatty, 63 oz.; spleen firm; kidneys congested.

At a recent meeting,

Dr. S. O. Habershon, President, in the Chair,

Dr. Morgan, F.R.C.S.I., of Dublin, read a paper on

A FERTILE SOURCE OF VENEREAL CONTAGION, DEMONSTRATED BY EXPERIMENTAL RESEARCH AND DIRECT PROOFS, ILLUSTRATED BY MODELS AND DRAWINGS.

This paper, and the discussion upon it, excited unusual interest. In fact, Dr. Morgan, who came from Dublin to submit his views, and was enthusiastically received, may be said to have brought about one of the most thorough discussions that have taken place this year at the societies. The Medical Society of London is evidently able to produce debates as full of animation as those which have been supplied by the Pathological and Clinical Societies. We give a lengthy report:—

In speaking of the results of the Contagious Diseases Acts, Mr. Morgan said that the results of their adoption had been to cause a very marked diminution of the disease in those districts protected by them. The War Office Return of 1872 states that the percentage of soldiers diseased has fallen from 108 per 1,000 to 54 per 1,000 in the protected districts, while in the unprotected the percentage has increased to 123 per 1,000, and it is a most remarkable fact that in the protected districts, the disease is of a milder character, or in other words, that in these districts the soft or chancroid sore has replaced to a great extent the true or chancre sore. The author then called attention: 1. To the working of the Contagious Diseases Acts. 2. To the explanation of the attainment of the milder form of the disease by the enforcement of the Acts. 3. To the question of the duality of the venereal disease. 4. To the possibly curative tendency of the introduction of a milder form of the disease by artificial means. He pointed out that the great source of the propagation of the milder forms of the venereal disease was the inoculation by contact of the vaginal discharge (muco-purulent or purulent, as the case might be) of women when suffering from a syphilitic taint. He had been forced to this opinion from the result of a large number of testings he had made. These were performed by means of inoculation as practised by Ricord, and the virus was taken, not from the sores, but from the vaginal discharge of patients in whom no sore was discernible, and who had been weeks and even months confined to the hospital, where the possibility of recent infection with soft sores was impossible. The patients had all been over and over again examined with the speculum. It might be said by some that only those patients who were already syphilitic were tested, and this was the case, for it was clearly inadmissable to inoculate a healthy person, and it showed that the result of the inoculation of the vaginal discharge was, as a rule, much more active and more intense than inoculation with matter taken from the primary sore or its resulting pustule, and he inclined to the opinion that the frequent occurrence of the soft sore in the male is explicable by its being a derivative of syphilis proper or a modification by descent, and one which leaves the system in very many cases unscathed. He believed in the unicity of syphilis, but that it was capable of modification by descent, and that the non-infecting sore so frequently followed a definite course as practically, in the male, to constitute a distinct disease and require a different treatment. In the Dublin Lock Hospital, on the female side, less than ten per cent. of the sores are indurated, yet fully ninety-five per cent. of the patients suffer from constitutional signs. He had recorded accurately ninety-one cases of primary disease, as the patients entered the hospital. He auto-inoculated ten, all had constitutional signs; four, auto-inoculated and had bubo, all had signs; three, auto-inoculated, had none before leaving; the remainder were not auto-inoculated, and five only out of the ninety-one had induration. In reply to inquiries made by the author, the surgeon of the Curragh Lock Hospital stated that, "any and every form of primary sore, whether with or without induration, may be succeeded by constitutional signs; induration in the female is exceptional." The surgeon of the Cork Lock Hospital for females stated, "I have not met with more than two or three sores which could be considered in any way indurated, in fact, they all had the character of the soft sore." Attention was next drawn to the activity of the vaginal discharge, or the muco-purulent secretion of *syphilitic* females, in producing the inoculation pustules. In the patients from whom this discharge was taken sores were carefully sought for by the speculum, and as some of the patients had been under strict hospital *régime* for two or three months before the inoculation test was put in practice, the existence of an internal sore must have been all but impossible. The comparative disappearance of the hard or infecting sore in protected districts was also explicable if it was remembered that the result of the inoculation of the vaginal discharge of syphilitics on syphilitics was the production of a sore which conducts itself as the chancroid, with its comparative constitutional non-infection, and we may fairly conclude that if communicated to a non-syphilitic male it should result similarly, and though derived from a syphilitic stock, is so modified by descent as usually to expend itself locally. Mr. Morgan said he had frequently tried the secretion from mucous patches, and, as a rule, failed, though he had succeeded in the young, and produced a sore of the same chancroidal aspect. He had not tried the pus of an ordinary abscess or other source, as, though he would not have any hesitation in using the specific pus of syphilis or of gonorrhœa, he would shrink from using that from ordinary sources, fearing what must be admitted to be the mystic dangers of pyæmia. The writer had inoculated gonorrhœal matter in six cases, and failed to produce a pustule in each case, and therefore he drew the inference that it was not any condition within, but clearly outside the patient, which led to the formation of the specific pustule and sore capable of reproduction in its kind and capable of becoming the scolex or head of an endless reproductive chain, each joint of which is in turn (when cast off) capable of becoming the head of a series. The author concluded his paper, which was fully illustrated by models in wax, diagrams, and printed notes, by observing that he was not an arguer in favour of the adoption of the inoculation cure. There were many arguments against it on the ground of inconvenience, repulsiveness, and uncertainty, but when it seems evident that from an intensely tainted and syphilitic source, the milder and usually admitted harmless variety of sore can be obtained, it may yet form the basis at least for a possible and rational line of treatment.

Mr. ACTON felt personally indebted to Dr. Morgan for coming forward this evening and demonstrating the advantages of the Contagious Diseases Acts in Ireland. Surely if vaginal discharges were so easily inoculable, it was an additional reason why women suffering under these affections should be compelled to enter hospitals and remain there till cured. Dr. Morgan had assumed that a woman suffering under secondary syphilis was liable necessarily to an inoculable vaginal discharge. Mr. Acton would appeal to those having the largest experience, and ask them whether they would not corroborate the opposite belief that pure uncomplicated secondary syphilis was on the contrary, generally unattended with vaginal discharges. He (Mr. Acton) would therefore maintain that a discharge from the vagina need not necessarily arise from secondary syphilis. When studying inoculation in the wards of the Parisian hospitals, he was accustomed to collect the secretion of primary sores, and keep it in closed tubes. It acted almost as well at the end of considerable periods of time as did fresh-collected virus. It was in those days a well-ascertained fact that if syphilitic poison was placed upon the sound skin or upon a mucous membrane where the epithelium was uninjured, no effects would be produced. Mr. Acton, therefore, did not look to constitutional symptoms of syphilis as the cause of the inoculability of Dr. Morgan's vaginal discharge; but believed that the success of his inoculation depended upon the deposition on the vagina of secretion of a primary sore coming from an infected man, and which secretion had not been thoroughly washed away, although the woman may have been in hospital some weeks. No one unacquainted with the numerous sources of error that may occur in the investigation of inoculation could believe in the various sources of error met with in practice. Without absolutely denying the contagion of secondary symptoms, no doubt could exist that positive evidence was still wanting corroborating the statements that all parts of secretions of secondary symptoms was highly contagious. Primary syphilis was undoubtedly a very inoculable disease; but Mr. Acton had yet to learn that the secretion from secondary syphilis was an easy medium of communicating the affection from one individual to another. His own private practice led him to no such conclusion. He (Mr. Acton) was now only occupied in private practice. Under such circumstances statements could be well observed, tested, and corroborated by personal observations, and these did not tally with the opinions of some modern writers who appeared to have collected their cases at dispensaries, or among the out-patients of hospitals. The statements of these patients were often misleading. He had been taught in the wards of Ricord to test in every conceivable way facts as they occur in practice. There nothing was taken for granted, and everything connected with the subject was treated as doubtful till tested. In some cases mis-statements were to be attributed to ignorance; in others deep cunning existed, which had to be probed. In private practice it must be remembered that we often have to do with an intriguing woman, a scapegrace of a man, a lying nurse, and a child unable to speak. With these uncertain data, we have the further sensational items of adultery, seduction, and illegitimacy. Yet there are those among us who, without much personal experience, profess to be able at once to decide upon the most complicated cases. It was impossible in a discussion like the present to enter upon the abstruse questions started in the paper, and he should prefer carefully examining the cited cases before coming to any conclusion on the results to be drawn from them.

Mr. HENRY LEE said that the profession and the Society must be deeply indebted to Dr. Morgan for having taken so much pains, and for having undertaken so long a journey to bring under their notice a very remarkable series of facts. That they were facts he (Mr. Lee) did not doubt, and they were, in fact, partly confirmed by his own experience. He had inoculated the secretion from the mucous membrane of a syphilitic patient, and produced what appeared to be a specific pustule. But then came the very important question whether the results of all syphilitic inoculations were the same. Now, in order to clear up this subject, those inoculations must be observed in uncomplicated cases; and here he (Mr. Lee) believed Nature would always be true to herself, and would, under the same circumstances, always give the same answer to the same question. The secretion of the local suppurating sore, if inoculated, would always, when uninfluenced by any other action, produce a strictly local disease. The inflammation would not extend beyond the immediate neighbourhood of the inoculated point; a pustule would form, accompanied by loss of substance, and a well-defined circular pock-mark would be left. On the other hand, if the secretion from a real syphilitic affection were inoculated upon a patient who had not previously had the disease, some local irritation might follow, but the real effects of the poison would not manifest themselves until after the lapse of some days, and then would appear one of the well-known forms of the primary manifestations of the constitutional disease. But if this same secretion from a syphilitic patient were inoculated upon a patient who had at the time constitutional syphilis, then the sore which resulted might have no period of incubation, and would probably be unaccompanied by any induration either at the seat of the inoculation or in the corresponding inguinal glands. It would be modified by the existence of previous disease, and that disease might be roused into action not only by the inoculation of the secretion from a syphilitic patient, but from the inoculation of common pus. He (Mr. Lee) had shown to the Society last year a very well-formed pustule accompanied by some amount of ulceration which had been produced by inoculating the pus derived from a case of excision of the knee-joint in a child. This inoculation was, however, made of a syphilitic patient, and the virus was not in the pus inoculated, but in the patient inoculated. Now, in all Dr. Morgan's cases the experiments were performed upon patients already syphilitic, and therefore there was the twofold action of the virus inoculated, and of the disease already in progress in the patients' systems, and in accordance with this twofold action the results which Mr. Morgan had demonstrated by the casts and drawings before the Society were very different from those which he (Mr. Lee) had seen as the result of the inoculation of the secretion of the local suppurating sore upon patients who had not previously had syphilis. In Dr. Morgan's cases, as illustrated, there was a halo of inflammation extending a considerable distance from the seat of the puncture; there were in several cases irregular and somewhat extensive superficial ulcerations; and in one case a well-formed pustule had been formed within twenty-four hours. These results differed, he repeated, very materially from those of the inoculations from the simple suppurating sores, and the difference must be attributable to the twofold action which was set up. Dr. Morgan had proved that the secretion from the vagina was inoculable. Now this might be the only secondary manifestation in a syphilitic woman, and he (Mr. Lee) would ask Dr. Morgan whether any amount of physical examination would enable him to say whether any given patient under those circumstances was syphilitic or not if she had well washed herself previously to being examined? Dr. Ricord had formerly laid it down as a rule that no patient could contract syphilis except from a primary syphilitic sore; and many cases of most cruel injustice had happened in consequence. A man who had had syphilis before his marriage sometimes found that his wife became subsequently diseased. Acting upon the opinion given by Ricord and those that followed him, and being not only accuser, judge, and jury, but also sometimes the author of the mischief, he treated his wife, upon the medical evidence alone, as if she had been unfaithful to him. Dr. Morgan had now shown experimentally that which he had long upheld—that the secretions from a syphilitic person, whether accompanied by an open wound or not, would communicate constitutional syphilis. Mr. Lee concluded that the illustrations given by Dr. Morgan were examples of syphilitic inoculation modified by the patients upon whom the inoculations were made being syphilitic at the time; and that the effects produced differed in their essential characters both from those produced by the inoculation of the secretion from a local suppurating sore and also from the results of the inoculation of the products of secondary manifestations in uncomplicated cases.

Mr. DE MERIC thought the inferences drawn from the experiments were open to criticism. He would first allude to one of those experiments in which it was sought to prove that the chancroid may have a long incubation. Here an inoculation was followed immediately by a pustule, and sixteen days afterwards by an ulcer. Now there is no incubation here, the pustule was evidently the positive and rapid result of the inoculation. Passing on to the principal portion of the paper, we find that one of the main assertions of the author is the frequency of the indurated sore in men and its great rarity in women. This is a pretty common belief, which has, however, been rectified by Fournier, who, like Dr. Morgan, writes from a Lock Hospital for women. M. Fournier, in his admirable lectures, had numerically proved that the proportion of hard sores in women is pretty considerable. He (Mr. de Méric) had, in his hospital practice, seen a good many of these hard sores in women. Now, it would seem that Mr. Morgan was struck by this supposed disproportion, and asked himself whence the male portion of the population took their hard chancres; and hence the numerous and highly important inoculations with vaginal fluid which the author of the paper had undertaken, and which place his name by those of Carmichael and Wallace. And here the evident leaning of Dr. Morgan towards the doctrine of unicity must be mentioned, because the value of the inoculations just mentioned rests on the belief in that doctrine. The author of the paper is inclined to think that the infecting chancre and the chancroid are derived from the same virus; and he draws the conclusion that the chancroids which he produced with the vaginal discharge upon patients already suffering from syphilis would have turned out hard or infecting chancres had the subjects upon whom the inoculations were undertaken been in a perfectly healthy condition. To this, however, all those professing dualistic opinions must demur. Granting that the sores produced by the vaginal discharges were really chancroids, which a previous speaker (Mr. Henry Lee) had questioned, it does not follow that on healthy people true chancres would have been generated. Dr. Morgan actually thinks that syphilis proper can be communicated by such discharges, and at once applies this hypothesis to the Contagious Diseases Act, insisting that inspectors should pay considerable attention to the leucorrhœal state of the women brought under their notice. That a chancroid, however, existing upon a patient already suffering from syphilis might convey the latter disease, was a melancholy fact. Dr. Morgan, on the plea that there was *something* in the inoculations he had performed, during which the syphilitic symptoms of the patients seemed to have diminished, was inclined to put some faith in the curative power of such inoculations. Boeck's system had been condemned in this country by the very surgeons who, at the London Lock Hospital, had powerfully assisted him in his experiments; and it is to be hoped that such men as Dr. Morgan will not lend the weight of their name and reputation to a practice which is both repulsive and ineffectual.

Dr. CHARLES R. DRYSDALE said he had long been familiar with Dr. Morgan's work on syphilis and with the important experiments referred to by the author, which he (Dr. Drysdale) considered to be unassailable. He had himself made some attempts to verify Dr. Morgan's conclusions, and had inoculated female patients affected with syphilitic eruptions on four occasions from their own vaginal secretions. In three of these cases no result took place; but on the fourth a pustule was produced under the right breast, quite similar to those he was accustomed to see during the numerous inoculations made by Professor Boeck when in London. He therefore thought it most highly probable that such vaginal secretions in public women might, in numerous instances, produce both syphilitic and ordinary sores on healthy men. The question of *duality* was a practical one more than it was theoretical. In the male, he used to notice at the Midi Hospital of Paris that perhaps four-fifths of the sores seen could be distinctly called soft or hard; but even then, as Dr. Morgan said, the prognosis as to the appearance or non-appearance of syphilitic eruption was sometimes doubtful. It seemed to him that Dr. Morgan's experiments explained well the great uncertainty observed to obtain as to the results of confining women in hospitals under the Contagious Diseases Acts. Syphilitic secondary eruptions lasted usually eighteen months or two years, and, during all this time, it was likely, according to Dr. Morgan, that vaginal discharges in syphilitic women might infect; so that, in order to prevent the contagion of true syphilis, a prostitute should be logically confined for two years in prison when she had once had syphilis, which was out of the question, and quite a *reductio ad absurdum* of the Acts. Finally, as to the curative effects of auto-inoculation, it was now well known that in most instances secondary eruptions tended to pass away spontaneously, so that these inoculations merely gave time for natural processes to run on.

OBITUARY.

ALTON.—Feb. 19, William Alton, Esq., M.D., F.R.C.S.I., in the 70th year of his age.

ANNESLEY.—On the 8th of Feb., at Cheltenham, J. C. Annesley, M.R.C.S.E., Surgeon-Major Bengal Service, aged 41.

BARRY.—On the 31st of Jan., James Joseph Barry, M.R.C.S.E., L.A.H. Dub., L.M., of Albion Place, Ramsgate, aged 66.

BATTISHILL.—On the 4th of Feb., John Battishill, M.R.C.S.E., of Spreyton, Devon, aged 69.

BEATTY.—On the 6th of Feb., at Plymouth, Captain John Calcott Beatty, late Leitrim Rifles, only son of late Thomas Edward Beatty, Esq., M.D., of Dublin, aged 46.

BRISCOE.—On the 6th of Feb., William Osborne Briscoe, M.D., F.R.C.S.I., at Garnareagh, co. Kilkenny, in the 74th year of his age.

BYWATER.—On the 19th of Jan., suddenly, at Lanehead, Coniston, Lancashire, Robert Turner Bywater, L.R.C.P.Ed., M.R.C.S.E., L.S.A.L., aged 49.

CANSTATT.—On the 3rd of Feb., N. J. Canstatt, M.R.C.S.E., of Castle Street, Houndsditch, aged 79.

CASKIE.—On the 4th of Feb., John Caskie, M.B., C.M., of Stewarton, Ayrshire, aged 23.

DE LA MOTTE.—On the 13th of Feb., H. D. C. De la Motte, Surgeon, of Swanage, aged 77.

FEGEN.—On the 7th of Feb., at Acre Terrace, Stoke, W. B. Fegen, M.R.C.S.E., Staff Surgeon R.N., aged 56.

HEWETT.—On the 20th of Feb., at Chesterfield Street, Mayfair, Sarah Elizabeth, wife of Prescott Hewett, F.R.C.S.

HOOPER.—On the 8th of Feb., George Hooper, L.R.C.P.Ed., of Breck Road, Liverpool.

JONES.—At Rhayader, Radnorshire, Ebenezer Jones, M.R.C.S.E.

KELLOCK.—On the 4th of Feb., Wm. Kellock, L.S.A.L., of Totnes, aged 78.

KIDD.—On the 18th of Feb., at Westbourne Park Terrace, Charles Kidd, M.D.

LONG.—On the 7th of Feb., E. Long, M.R.C.S.E., of Thornbury, aged 40.

MACANN.—On the 4th of Feb., Arthur B. Macann, M.R.C.S.E., of King Street, Portman Square, aged 58.

MCGEE.—On the 10th of Feb., at Plymouth, Dr. McGee, J.P., late Royal Navy, aged 81 years.

MORGAN.—On the 5th of Feb., Major Butler Morgan, M.R.C.S.E., of Lichfield, aged 71.

PETTIGREW.—On the 13th of Feb., Wm. Vesalius Pettigrew, M.D., of Upper Norwood, aged 58.

PORTER.—On the 2nd of Feb., at Ash-mount, Sheffield, John Taylor Porter, F.R.C.S.E., aged 55.

PRIESTLEY.—On the 5th of Feb., H. Priestley, jun., L.R.C.P.Ed., of Sheffield, aged 26.

SMITH.—On the 24th of Jan., at Suez, John Ablewhite Smith, L.R.C.P., M.R.C.S.E., of Louth, aged 80.

NOTICES.

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Subscribers paying in advance receive the DOCTOR post free at the published price. Subscriptions may begin at any time, but must end in December. This is necessary on account of the multitude of small accounts.

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THE DOCTOR.

LONDON, APRIL 1, 1874.

Multum in parvo.

MEDICAL EDUCATION AND EXAMINATION.

THE changes that have taken place of late years in the education and examination of members of the profession have tended to make it more difficult to obtain diplomas, and have therefore been thought by many to fall rather hardly on students. We do not ourselves believe that medical students desire to escape regulations that tend to the benefit of the profession they have adopted as well as to the welfare of the public. We do, however, consider that in some instances they have reason to complain of the the overlaying of the curriculum with subjects which, whatever their value, are of less importance than strictly professional work. We rejoice, therefore, that Professor Huxley alluded to this in his address as Lord Rector of the University of Aberdeen. This address appeared in the last number of the *Contemporary Review*, and deserves the attention of all interested in medical education and examination. Professor Huxley is himself a member of our profession, and has had large experience as an examiner, and we invite the attention of teachers and examiners alike to the words of wisdom he uttered at Aberdeen. We quote some of these in reference to each point—first, as to education. He said :—

"If I had the power to remodel medical education, the first two years of the medical curriculum should be devoted to nothing but thorough study of anatomy and physiology, with physiological chemistry and physics ; the student should then pass a real, practical examination in these subjects ; and, having gone through that ordeal satisfactorily, he should be troubled no more with them. . . . .

"We are told that the medical man ought to be a person of good education and general information, if his profession is to hold its own among other professions ; that he ought to know botany, or else, if he goes abroad, he won't be able to tell poisonous fruits from edible ones ; that he ought to know drugs, as a druggist knows them, or he won't be able to tell sham bark and senna from the real articles ; that he ought to know zoology, because—well, I really have never been able to learn exactly why he is to be expected to know zoology. There is, indeed, a popular superstition, that docters know all about things that are queer or nasty to the general mind, and may, therefore, be reasonably expected to know the 'barbarous binomials' applicable to snakes, snails, and slugs ; an amount of information with which the general mind is usually completely satisfied. And there is a scientific superstition that physiology is largely aided by comparative anatomy—a superstition which, like most, once had a grain of truth at bottom ; but the grain has become homœopathic since physiology took its modern experimental development and became what it is now—the application of the principles of physics and chemistry to the elucidation of the phenomena of life. . . . .

"Methuselah might, with much propriety, have taken half a century to get his doctor's degree ; and might, very fairly, have been required to pass a practical examination upon the contents of the British Museum, before commencing practice as a promising young fellow of two hundred, or thereabouts. But you have four years to do your work in, and are turned loose, to save or slay, at two or three and twenty.

"Now, I put it to you, whether you think that, when you come down to the realities of life—when you stand by the sick-bed, racking your brains for the principles which shall furnish you with the means of interpreting symptoms, and forming a rational theory of the condition of your patient, it will be satisfactory for you to find that those principles are not there—but that, to use the examination slang which is unfortunately too familiar to me, you can quite easily 'give an account of the leading peculiarities of the *Marsupialia*,' or 'enumerate the chief characters of the *Compositæ*,' or 'state the class and order of the animal from which Castoreum is obtained.'"

The second topic to which we have alluded as so well put by Professor Huxley is that of examination, and this he treated in the following terms :—

"Examination—thorough, searching examination—is an indispensable accompaniment of teaching ; but I am almost inclined to commit myself to the very heterodox proposition that it is a necessary evil. I am a very old examiner, having, for some twenty years past, been occupied with examinations on a considerable scale, of all sorts and conditions of men, and women, too—from the boys and girls of elementary schools to the candidates for honours and fellowships in the universities. I will not say that, in this case as in so many others, the adage, that familiarity breeds contempt, holds good ; but my admiration for the existing system of examination and its products does not wax warmer as I see more of it. Examination, like fire, is a good servant, but a bad master ; and there seems to me to be some danger of its becoming our master. I by no means stand alone in this opinion. Experienced friends of mine do not hesitate to say that students whose career they watch appear to them to become deteriorated by the constant effort to pass this or that examination, just as we hear of men's brains becoming affected by the daily necessity of catching a train. They work to pass, not to know; and outraged science takes her revenge.. They do pass, and they don't know. I have passed sundry examinations in my time, not without credit, and I confess I am ashamed to think how very little real knowledge underlay the torrent of stuff which I was able to pour out on paper. In fact, that which examination, as ordinarily conducted, tests, is simply a man's power of work under stimulus, and his capacity for rapidly and clearly producing that which, for the time, he has got into his mind. Now, these faculties are by no means to be despised. They are of great value in practical life, and are the making of many an advocate, and of many a so-called statesman. But in the pursuit of truth, scientific or other, they count for very little, unless they are supplemented by that long-continued, patient 'intending of the mind,' as Newton phrased it, which makes very little show in examinations. I imagine that an examiner who knows his students personally must not unfrequently have found himself in the position of finding A's paper better than B's, though his own judgment tells him quite clearly that B is the man who has the larger share of genuine capacity.

"Again, there is a fallacy about examiners. It is commonly supposed that anyone who knows a subject is competent to teach it; and no one seems to doubt that anyone who knows a subject is competent to examine in it. I believe both these opinions to be serious mistakes; the latter, perhaps, the more serious of the two. In the first place, I do not believe that any one who is not or has not been a teacher is really qualified to examine advanced students; and in the second place, examination is an art, and a difficult one, which has to be learned like all other arts.

"Beginners always set too difficult questions—partly because they are afraid of being suspected of ignorance if they set easy ones, and partly from not understanding their business. Suppose that you want to test the relative physical strength of a score of young men. You do not put a hundredweight down before them, and tell each to swing it round. If you do, half of them won't be able to lift it at all, and only one or two will be able to perform the task. You must give them half a hundredweight, and see how they manœuvre that, if you want to form any estimate of the muscular strength of each. So, a practised examiner will seek for information respecting the mental vigour and training of candidates from the way in which they deal with questions easy enough to let reason, memory, and method have free play.

"No doubt a great deal is to be done by the careful selection of examiners, and by the copious introduction of practical work, to remove the evils inseparable from examination; but, under the best of circumstances, I believe that examination will remain but an imperfect test of knowledge, and a still more imperfect test of capacity, while it tells next to nothing about a man's power as an investigator."

CHRONICLE.

NASAL POLYPI.

An interesting discussion on these growths took place last month at the Medical Society of London. It arose from four specimens being exhibited by Mr. F. Mason, who had removed them at one operation with forceps. They were very large—one being two inches long; but they were attached by narrow pedicles—mere threads. Mr. Mason thought the danger of evulsion was generally exaggerated. Mr. de Meric spoke in favour of Hilton's snare, and gave the views of French authorities as to dividing the velum, and more severe operations. Dr. Prosser James supported Mr. Mason's view respecting such polypi as those exhibited, and said the severer methods were only adapted to cases of a very different kind. He thought when evulsion was so easy it ought to be employed. Dr. James further urged the value of the rhinoscope, which he said enabled us to detect and cure polypi when they were quite small. He added that he had also been able to employ topical medication to small polypi by means of the rhinoscope, which instrument should also be used to make applications to their seat after removal in order to prevent a recurrence of the disease.

ETIOLOGY OF PULMONARY PHTHISIS.

In *Archiv. für Experim. Path.*, Heft 3, 1873, Dr. Sommerbrodt has published an article, in which he relates the results of various experiments which he had conducted with the object of showing the connection which exists between pulmonary phthisis and certain primary affections of the larynx. The *Lancet* says the following conclusions are drawn from his experiments:—

1. Chronic inflammation of the larynx and the upper part of the trachea in rabbits constantly induces pulmonary disease.
2. This disease is totally different from those which manifest themselves usually in rabbits, or which are produced experimentally, and consists in purulent peri-bronchitis, which, as is well known, ultimately brings on destruction of the lung, or pulmonary phthisis.
3. Consequently, purulent peri-bronchitis is an intermediate condition between primary ulcers of the larynx and pulmonary phthisis, and this is equally applicable to man.

REMEDY FOR CHRONIC HOARSENESS.

In chronic hoarseness arising from thickening of the vocal cords and adjacent membrane, the *American Practitioner* says that ammoniated tincture of guaiacum is often a very efficacious remedy. It may be appropriately mixed with equal parts of the syrup of senega, and a teaspoonful of the mixture given two or three times a day. We believe that guaiacum is a very old remedy for various diseases of the throat, and especially of the tonsils.

THE ACTION OF PURGATIVES.

M. Vulpian has completed some new experiments which confirm the results of MM. Legros and Onimus (*Récherches Expérimentales sur les Mouvements de l'Intestin*), as well as others obtained by M. Benoit, and reported by him in the *Courier Médical*. Vulpian concludes that sulphate of magnesia and other saline purgatives produce a real intestinal catarrh, by which large quantities of liquid are made to transude into the canal, though a portion is absorbed and removed by the kidney. For this reason these substances are contra-indicated in the vesical catarrh of the aged or in phosphatic gravel, which they would augment. Salines do not increase peristaltic action, but jalap, according to these experiments, did increase this movement as well as produce intestinal catarrh, chiefly of the larger bowel. Here, then, a distinction is furnished between these purgatives.

THE STYLOID MUSCLES AND ANÆSTHETICS.

Dr. G. W. Copeland contributes to the *Boston Medical and Surgical Journal* an important suggestion respecting the obstruction to the breathing that often occurs during the inhalation of anæsthetics, and which he thinks may be prevented by inclining the head forward. Failing, one day, to relieve the trouble by the usual plan of drawing the tongue out, he tilted the head forwards, closing the mouth, and established free and regular respiration through the natural channel, the nose. Since that time, he says, he has repeatedly relieved the difficulty in this simple way. This is his explanation :—

"Let us see what happens when the head is tilted back in the usual position. The styloid muscles are put on the stretch. The stylo-glossi draw the tongue backwards, the stylo-hyoidei draw the os hyoides upwards, and the stylo-pharyngei raise the pharynx and thyroid cartilage upwards, all thus uniting to close the epiglottis. Pulling out the tongue will partially overcome the action of the stylo-glossi, while the other muscles still maintain their action.

"Now, see what takes place when the head is tilted forwards. The styloid muscles are all relaxed, the tongue falls forward in the mouth, and the larynx falls into its proper place, thus leaving the epiglottis free and the glottis unobstructed.

"Here, then, I claim, is the secret of preventing or relieving this trouble with the breathing. So soon as the patient becomes in the least unconscious, tilt the head forwards and make him breathe through the nose, which certainly was made for that express purpose. It seems nothing more than fair that we should give our patient, when unconscious, the benefit of having his head in a natural position, or at least in the position which he maintains when conscious."

GANGRENE OF THE LUNG.

Dr. Cornil (*Progrès Méd.*, Jan. 24, 1874), observes that gangrene of the lung is often the consequence of lobular pneumonia and of lobar pneumonia. It consists in the mortification of a greater or less extensive part of the lung substance. Gangrene presents two anatomical varieties ; it is circumscribed and diffused.

Circumscribed gangrene generally appears in multiple foci disseminated through one lung, or in the two lungs, foci which at first sight resemble knots of lobular pneumonia. Whether the knots of broncho-pneumonia terminate in gangrene or follow after gangrene, the foci generally have the size of a walnut or hazel-nut, and they jut out on the surface of the lungs. When incised we see that they present at their centre a cavity in which there is a fœtid and thick liquid.

Around this cavity there are three layers, one above the other. The most internal is formed by a greyish adherent and pultaceous layer, which limits the loss of substance, and under which the wall of the cavity appears of a wine-red colour. The second is represented by a greyish zone of hepatised pneumonia in a state of gangrene, which no longer contains air in its interior. The third, which is continuous with the surrounding healthy parts of the lung, presents the appearance of catarrhal pneumonia.

These lesions are thus developed : At the outset a gangrenous pneumonia appears, presenting to the naked eye arborescent lines and opaque points of a yellowish-grey colour. In the microscope we see heaps of granular bodies which fill the little bronchi, the infundibula, and the pulmonary alveoli. At this level the vessels are completely filled by a fibrinous exudation adherent to their walls, the pulmonary tissue no longer receives blood, and undergoes a mortification of a true nature, commencing in the central parts. An excavation is the result, the hepatised tissue, continuing to fall in detritus, becomes enlarged gradually from the centre to the circumference.

In the sputa are seen pus globules and large cells infiltrated with fatty granulations, with opaque objects formed by filaments of connective tissue or elastic tissue, pigment granulations of orange or yellow colour from the colouring matter of the blood, and, lastly, crystals of phosphate of lime, margarine, leucine, and tyrosine. There may also be noticed some forms similar to the leptothrix buccalis. These sputa, besides, have another special character—they have a bad odour, quite fœtid ; they are greyish or puriform, and easily mingle with water. When the expectoration is abundant it may separate by resting into three layers.

When pneumonia attacks the surface of the lung it may cause pleurisy, after which, the gangrenous cavity becoming larger, sometimes opens into the pleura, and there causes a pneumo-pyo-thorax.

Diffuse gangrene is much more extensive, less limited, and more irregular in its form than circumscribed gangrene. It may be primitive, or arise in consequence of a thrombosis or embolon in a large branch of the pulmonary artery. It may, again, follow after lobar pneumonia.

Primitive or consecutive diffuse gangrene presents the same alterations as circumscribed gangrene ; but it attack great masses and kills a great part of the lung at once ; it causes great loss of substance and lesions much severer than the other.

The sounds noticed by auscultation in gangrene of the lung are in relation with the alterations met with in the different periods of the disease. Sometimes, indeed, there is simple induration, sometimes congestion around the indurated tissues, and sometimes loss of substance and a true cavity. Sometimes, again, there is true pneumo-pyo-thorax ; we then hear either dry crepitating râles or mucous râles larger or smaller, or cavernous râles, with more or less exaggerated resonance, or finally, amphoric bruits and Hippocratic succussion sound.

The crepitating râles heard in gangrene of the lung are caused by an induration, a hard and non-aërated block which compresses the neighbouring alveoli and flattens them during expiration, whilst these same alveoli, when distended by the afflux of an inspiration, make us hear the crepitating bruit. The mucous râles are caused by bronchitis and by the mucosities contained in the bronchi.

DEATH FROM VAGINAL INJECTION.

Vaginal injections of irritating nature are habitually prescribed, without thinking of the consequences to which they may give rise. Here is an observation of a vaginal injection, followed by death, which may make those persons reflect who consider the vaginal mucous membrane as but little sensitive.

This observation has been reported in the *Gazette des Hôpitaux* by Dr. Lorain. A young girl, æt. 16, was attacked with vaginitis, which was thought to be gonorrhœal. After an emollient treatment without efficacity, as the mucous membrane could not be directly cauterised, Dr. Lorain ordered an injection with a weak solution of nitrate of silver. A centigramme of nitrate of silver only had been passed into the vagina, with care ; nevertheless, there was great pain after the injection, the patient was restless and moved about in her bed. Ice upon the abdomen and in the vagina produced amelioration, and this condition remained for four days : vomiting took place, and stomatitis, resembling mercurial stomatitis. The temperature was 37·8° C.

On the 5th day, the patient died suddenly, at 7 in the evening, the abdomen not presenting any peculiar tympanitis

To what was this singular death attributable? Dr. Lorain thought this might be attributed to some drops of pus issuing from the Fallopian tubes, caused by a reflex action determined by the pain.

At the autopsy, Dr. Tardieu, in fact, showed that there existed metritis of the mucous membrane, with suppuration. We believe with Dr. Lorain, that the vaginal inflammation may extend through the cervix into the uterine cavity and even to the tubes, and that the mucous membranes of these different parts of the female generative organs may, according to the degree of inflammation, secrete mucus, muco-pus, or pus. But these cases are exceptional, and we doubt that in the case reported by Lorain, it was to the penetration of mucus or pus into the peritoneum that the death of this young girl was to be attributed. He does not, indeed, point out any symptom of peritonitis, nor any of its alterations; we rather conclude that this young girl died from some shock of the nerves provoked by an excess of sensibility, which is frequently met with. We have noticed at the Hôpital St. Pierre de Bruxelles a case in which the pus had penetrated from the tube into the peritoneal cavity, and the woman died of peritonitis.

In the condition wherein the patient of Dr. Lorain was found, we do not think we ought to limit ourselves to the administration of opiate preparations, enemata, or injections of emollient nature; we think, on the contrary, that more might have been hoped from dilating gently and progressively the orifice of the vagina, and indeed, the whole vaginal tract. This dilating action would have modified the nature of the pains, and would have transformed these advantageously, and finally caused them to cease. This is what happens notably in painful constrictions of the neck of the bladder, which sometimes get well as if by enchantment when the neck is dilated.

After that, nothing would have prevented recourse to a general sedative treatment, and to the immobilisation of the abdomen by a compress.—*Presse Méd. Belge*, No. 13, 1874.

PHOSPHORUS IN PUTREFACTION.

Dr. Jules Lefort, in a lecture at the Academie de Medecine of Paris, reported in *La Presse Méd. Belge.*, commences by reminding his hearers that in 1864, M. Collas, an apothecary of Paris, showed the influence of gelatinous phosphate of lime on the putrefaction of fish glue; the same chemist has discovered, besides, that fresh beef, hashed with a little phosphate of lime, became putrid in thirty hours, whilst another portion of the same meat not mingled with this salt, did not undergo putrefaction for seven days; whence he concludes with M. Pasteur, that if the phosphate of lime hastens putrefaction, it is because it contains one of the elements necessary for the development of the sporules of the special ferment.

M. Lefort has experimentally verified the exactitude of the theory of Collas. He has ascertained that the animal substances most putrescible are precisely those richest in phosphorus, such as the muscles of fish and of pork. Thus purulent infections are very easily produced in affections of the medulla of bones, as Gosselin, has noticed. This is, says Lefort, because the central cavity of the bone is less dense and more easily attacked than the periosteum, and, drier in organic substance, more easily yields phosphate of lime to the ferment.

The author has investigated what is the real nature of the principle which gives to putrefied animal matters the garlic odour and phosphorescence. He has found that this is not a phosphoretted hydrogen, as has hitherto been asserted, but a sulphide of phosphorus, which is produced as follows:—

As soon as the elements of the fibrine and of the protagon become separated, and that the sulphur and phosphorus, until then intimately penetrating the substance, become again vivified, they combine, hence the odour of putrid substances. But as the sulphide of phosphorus is very unstable, and decomposes with the giving-forth of light as soon as it comes into contact with water and air, thus becoming hydro-sulphuric acid and phosphoric acid, it is in this condition that the phosphorescence, whose existence is always of short duration, and also very feeble, is remarked.

Animal phosphorescence only takes place in the early period of putrid fermentation, and all the phosphorus of the protagon is not exhausted by its transformation into sulphide of phosphorus, and then into phosphoric acid. The sulphide of phosphorus is a violent poison, but M. Lefort does not pretend to explain by this fact the accidents of septicæmia, without, adds he, placing the sulphide of phosphorus in the same category as sepsine, this poison, which is so subtle and problematic, at any rate, up to the present time. It is not impossible that even in proportion to its eminently poisonous qualities, it may be the cause of the accidents sometimes caused by partaking of certain preserved substances, more or less changed or commencing to putrefy, such as salt fish, pork, butchers' preparations, and particularly pudding, sausage, Italian cheese, &c.

Once oxygenised in the condition of phosphoric acid, or of phosphate, phosphorus can no longer be deoxydised by fermentation, and combined with sulphur, but it influences the fermentation by facilitating the multiplication of the germs of the ferment. Waters containing phosphates should not be used for the cleansing of wounds, but distilled water, or rain water should be preferred.

THE USE OF ATROPIA IN OPHTHALMIC PRACTICE.

Dr. Ed. Curtis, of Sacramento, U.S. (*Pacific Med. and Surg. Journal*), in a lecture before the Society of Sacramento, speaks in greatest praise of the use of atropine in special eye practice. If asked, "what is the most important medicament in special practice?" he would reply "atropia," and he wonders how our predecessors got on without it. The only preparation of atropia which has not proved objectionable, is the *neutral* sulphate, which is freely soluble in distilled water, and is never irritating except in a few rare cases of intolerance. The mydriatic effect is accomplished in from twenty minutes to an hour, and lasts from one to four days. The patient's head should be placed so that any excess of the drops may pass out at the outer canthus, and thus no atropia can get into the lachrymal duct.

It is indispensable in iritis to break down adhesions. If freely used, the border of the pupil is carried away from the capsule of the lens. He uses a solution of eight grains to the ounce three times daily.

In inflammatory diseases of the cornea, atropia is also indicated, and in the severer cases of ophthalmia neonatorum a mild solution is useful with other remedies. In all injuries of the eye it is useful. It may be useful in progressive myopia and strabismus.

When using atropia, the patient should use an eye shade. He has used atropia in two-thirds of his eye cases. He has often cured syphilitic iritis by atropia alone, but specific medicine should also be used. It is the drug *par excellence* of the whole Pharmacopœia; "without it I would not attempt to practise my speciality; with it a case of iritis or keratitis has never yet gone blind when under my treatment."

WHAT IS PYÆMIA?

This is a question we may well ask at a time when the leaders of medical opinion are discussing the subject in a manner only to be paralleled by the debate on tubercle last year. Doubtful indeed, we feel, whether the debate on tubercle has in any way enlightened the profession. Rather we fear it may have tended to confuse. Yet such debates are not without value, and we are glad to see them well kept up. The debate on pyæmia promises some practical conclusions, and will probably serve as a starting point to many who wish to begin investigating this disease. Nevertheless, the word pyæmia is very unsatisfactory. Clearly, various speakers attach different meanings to it, and we therefore feel inclined to doubt whether, after all, there is as much difference of opinion as appears on the surface. The journals have been full of the subject all the month, and in our last issue we commenced what we believe will be recognised as one of the most important contributions to the subject—viz., the remarks of Surgeon-General Gordon, C.B., in our "Independent Department." It is remarkable how little reference has been made to the experience of army surgeons in the course of the debate, and we therefore urge our readers to supplement the perusal of the report by a study of Dr. Gordon's papers. In the article in our present number he deals with the debate at the Clinical Society, and we therefore need not report that.

Professor Hughes Bennett proposes to discard the term pyæmia altogether, and to employ the following words:

Septicæmia.—Poisoning of the blood from every source; a general term.

Ichorhæmia.—Poisoning of the blood from ichorous matter or decomposed pus.

Leucocythæmia.—White cell blood; excess of colourless cells in the blood.

Leukæmia.—White blood, from excess of fatty matter in the blood, so-called chylous, or milky blood.

Dr. Lionel Beale dissents from Dr. Hughes Bennett's views, urging very naturally that pus-cells, young mucous and epithelial cells, though very much alike, are not *identical*, and it would be introducing terrible confusion to call leucocythæmia "suppuration of the blood."

It seems to us easy to call two things by one name, but doing so does not simplify matters, and Dr. Bennett does not help us by proclaiming the identity of various cells, or by speaking of them as "white cells or leucocytes." The expression reminds us of a good story we heard the other day. A microscopist was jocosely asked by one of his colleagues if he could tell him anything he did not know about the white blood-cells. He answered at once, "From the terms of your question I think I can mention two things—in the first place they are *not* cells; in the second place they are *not* white."

ANÆSTHETIC PROPERTIES OF BROMIDE OF POTASSIUM.

Dr. Woillez (*Presse Méd. Belge*, 12) observes that the anæsthetic properties of bromide of potassium on the posterior part of the pharynx have been used by surgeons in operations on the soft palate. Dr. Bonnet has used this remedy in the case of consumptive patients for the purpose of obviating vomiting during fits of coughing. The method has been explained by the author, who touches the pharynx with a hair pencil or piece of lint dipped in a concentrated solution of bromide of potassium. He uses a solution of ten grammes of pure bromide to twenty grammes of distilled water, which is made use of mornings and evenings, before meals; the patients are told not to cough directly after being touched.

In four patients this method gave relief at once, in others some time elapsed, but it always does good.

It is probable that this method might prove useful in other cases of obstinate vomiting, for instance, after inanition or in pregnant women, and the simplicity of the remedy makes us hope that further trials will be made of it.

MILD TYPHOID.

We are inclined to agree with Professor Jürgensen of Kiel, who tells us in Volkmann's *Sammlung Klin. Vort.* that the study of the lighter forms of this disease has been lately too little prosecuted. He asks whether the poison varies in quantity or intensity, and what must we attribute to the receptivity or the resistance of the patient's constitution. His consideration of these questions is interesting, though not perhaps so much so as his clinical study of the fever, based upon more than 80 cases. Mild typhoid, as shown by Griesinger, is distinguished by its brief duration rather than its less intensity. The symptoms are sometimes as urgent as in graver cases. In 16 cases of Jürgensen's the disease lasted only 6 or 7 days; in 17 it continued 8 or 10 days; in 24 from 11 to 13; and in 28 from 13 to 16. Further, the febrile condition commences more suddenly—the invasion is by distinct rigor rather than by the previous malaise which so often is seen in true typhoid. Again, the elevation of the temperature is rapid; it may reach 104° in 36 hours from the rigor. The defervescence is also regular and uninterrupted, and complete in from 24 to 72 hours. We do not, therefore, meet with the great oscillations that occur in true typhoid, nor with temperatures below the normal. The eruption appears generally on the fourth or fifth day. It was seen in 45 per cent. of the cases that lasted 10 days, and in 75 per cent. of those in which the disease was prolonged from 10 to 16 days. Intestinal symptoms varied with the epidemic without appearing in relation to the gravity of the cases. The urine often contained albumen at an early stage. Bronchitis was neither frequent nor severe. Convalescence was prolonged, and relapse easily provoked, so that Jürgensen advises great care in diet for a week after the normal temperature has returned. The milder cases observed by Jürgensen would be called febricula by many, while the severer ones would be classed as true typhoid. It becomes a question how far classification is artificial. Can we, as some think, rely upon temperature alone? We rather think not.

THORACIC FISTULA.

Dr. L. Wittmann (*All. Wien. M. Ziet.*, March 3, 1874) mentions an interesting case of thoracic fistula occurring in a boy aged 15, who had been several times in the hospital of Pesth. In April 1873, he was in hospital for circumscribed peritonitis, and left in a very weak state. In the course of a week he returned with high fever and stitch in the right thoracic region. In the middle of May considerable pain was complained of on pressure on the sixth and seventh ribs; in some days there arose in the region of the ninth and tenth ribs a soft swelling, the edges of which were gradually merged in the surrounding soft parts. There was dulness in the right chest to a great degree, and the side was about half a centimetre larger in measurement than the left. On the 27th May evident fluctuation could be detected in the tumour. In a day or two afterwards, the patient, after an attack of coughing of some hours' duration, spat up a great quantity of purulent fluid, which purulent sputum lasted in less degree until the 26th June on which day the patient was sent home, when the fever had abated, and the tumour was much flattened, but there was greater dulness.

On the 23rd November he was again taken into hospital, and in a very critical position. During his stay at home there had appeared successively in the lower half of the right chest three abscesses, which gradually burst and poured forth a fœtid pus. On inspection there were seen three pus-secreting wounds, one below the other, which lay on the posterior axillary line on the tenth and eleventh intercostal spaces. On deep inspiration or coughing, there exuded from the three openings a most fœtid pus, besides which the sputum was purulent, and fever was high.

On the 27th November the aspirateur of Dieulafoy was made use of, the use of which the physician had seen followed by excellent results in the cliniques of Professors Bouchut, Roger, St. Germain, and others in Paris. With the canula No. 3 the pus was partly withdrawn, and also a solution of permanganate of potash was injected (d. 14 to 30 water). The injected fluid escaped through the fistulæ or was drawn out by the aspirateur.

On the first injection being somewhat suddenly made, the patient had a severe attack of coughing, during which he spat up a fœtid and somewhat violet-coloured pus, at the same time mentioning that he tasted the somewhat peculiar taste of permanganate of potash. The washing out was made use of twice daily, and in seven days the secretion of pus had quite left off, the fistulæ were smaller, the cough less, and the fever gone. On the 6th January, 1874, severe fever again arose, when there was discovered to be a pneumonia on the left side in the lower lobe, which was resolved in a week. At present, as regards the fistulæ, there are seen three small granulating wounds. The percussion is a little duller, and the respiratory murmur rather weakened. The circumference on the right side was thirty-one, on the left, thirty centimetres. The spine deviates slightly to the left. The boy is wonderfully restored to health.

TOPICS OF THE TIME.

ATOMISED INHALATIONS.

The Paris Academy of Medicine has had a discussion respecting the therapeutic value of inhalations of atomised fluids, or sprays that deserves attention. The debate originated in a report on the mineral waters and baths of France presented by M. Bourdon. In France several of the mineral waters are used not only for baths and drinking, but for application to the respiratory mucous membrane as sprays. It may indeed be said that it was in these establishments that the use of sprays first found favour. Rooms are fitted up for the purpose, and filled with the atomised mineral water, the use of small apparatus being in reality a substitute for such rooms. We are, however, disposed to think that the use of the small apparatus is in many cases preferable to a resort to the establishments. It will be seen that it is to the latter the discussion at the Academy chiefly related.

M. Bourdon mentioned that atomised waters were used by Fontan at Luchon more than thirty years ago, and ten or twelve years ago the therapeutic uses of Luchon water, in the form of spray, were brought under the notice of the Academy. It was shown that the spray really penetrated by various experiments on animals, and on a woman whose trachea had been opened; but it has been contended that the composition of the liquids is changed, and no doubt gaseous constitutents are decreased or lost.

From the debate that ensued, it is clear there is great divergence of opinion in France as to the therapeutic value of sprays. Trousseau approved of them, as did others, and as do now Professors Gubler, Démarquay, Giraldès, and others. M. Ridoux, who is inspector at Eaux-Bonnes, says he has only used sprays for the fauces and first portion of the larynx. In pulmonary diseases he finds they fatigue the patients too much. He says in experiments on animals the liquid penetrates the trachea and bronchi because it is injected with force; but in human beings, in ordinary conditions, he does not believe the spray enters the deeper parts of the respiratory passages to such an extent as to be useful. He therefore does not attach much importance to sprays in diseases of the lungs, and in this he was supported by MM. Durand-Fardel, Jules Guérin, and Colin. These authorities, however, distinctly admitted the value of sprays in diseases of the throat, and though they doubted their penetration far into the bronchi, acknowledged they had been proved to enter the larynx.

We think that English therapeutists will generally adopt a similar view. In diseases of the throat sprays are effectual; in many cases they are the best remedies for laryngeal disease, but the deeper the disease in the air passages the less likely are sprays to be able to control it.

DISEASES OF THE TONGUE.

The unruly member has absorbed a good deal of attention during the month. Although the diseases of the tongue are not very numerous, and the organ is not so often under treatment as many others, when patients are driven to the doctor for these ailments the cases are apt to prove obstinate or intractable. Hence great interest attaches to the subject. Specific disease may be for the present excluded, but cancer is no uncommon termination to cases that had been thought trivial by the patients.

Mr. H. Morris, in a careful paper on "Ichthyosis Linguæ" (*Brit. Med. Jour.*), laid it down as an axiom that the white, hard, thickening of the mucous membrane, which Mr. Hulke and others called ichthyosis, invariably ended in epithelioma. Soon after Mr. Morris's paper was published, in which there was a good drawing of the microscopic appearances, the subject was brought before the Royal Medical and Chirurgical Society by Mr. Fairlie Clarke, and a very instructive discussion resulted. In another page we give a full report of the discussion, as we deem it of great value. It will be seen that much objection was felt to the term ichthyosis, and others were proposed. We believe the disease usually passes under the name of psoriasis, both in this country and abroad, and the same condition of the mucous membrane often extends to other parts of the mouth. Syphilitic cases simulate this, and should be carefully distinguished, as in them treatment is more effectual.

Mr. Morris not having been present at the society has since published some remarks on the debate. He does not think the disease arises in irritation, and we agree with him, for the irritation arising from inveterate smoking counts for little, when we find that ichthyosis linguæ occurs in those who have never been great smokers, and when we remember that hundreds of smokers of short pipes, and short cigars, too, take in "very hot smoke," but do not suffer from this disease. It unquestionably occurs in persons whose tongues have never been exposed to any excessive or unusual irritation, whether from smoking, tongue-scraping, glass-blowing, or otherwise. Mr. Morris says:—

"I do not know if Mr. Clarke has been able to prove that persons with ichthyosis linguæ have a strong inborn tendency to the development of warty growths; nor do I see how treatment directed to the digestive organs can benefit (as it seems to do ichthyosis linguæ) a condition due solely to irritation in a person with or without such a tendency. It is admitted that ichthyosis linguæ never gets well under treatment; but being of the character and kind it is, ought it not, if produced by irritation, to disappear soon after the removal of the irritation? Should we not expect the dogma of the schoolmen—'Sublatâ causâ, tollitur effectus'—often enough erroneous, to be, at least in this case, verified?"

As regards operative treatment, the wisdom of excising the affected tissues depends upon the degree and extent to which they are involved.

Some of the cases mentioned by those who took part in the discussion prove an association in the same person, and also in persons of the same family, of ichthyosis linguæ and ichthyosis of the skin. From this the name given by Mr. Hulke has been defended, but, as we have said, psoriasis is more commonly used, and other names have been proposed.

Dr. T. Fox disapproves the term ichthyosis, and says the analogy between the disease of the tongue that has been so-called, and that of the skin is not striking, even as to naked-eye appearance. He thinks the disease of the tongue is an early stage of epithelioma, bearing the same relation to that disease as the warty growths which are often followed by rodent ulcer on the face.

Tylosis, a term proposed by Ullmann, or Keratosis linguæ would be a suitable name.

GENERAL PARALYSIS.

Dr. Bruardel, in a lecture delivered at the Charité Hospital of Paris (*Le Mouvement Médical*, 14th March). observes that physiology teaches that true or tonic muscular contraction is but the result of the rapid succession of a certain number of small shocks close together. Experience also shows us that a muscle requires, in order to contract, to receive thirty-two times per second the motor excitation which each little shock produces; it appears to me right to remind you here of the original observation of an English physiologist, who has remarked, that if we listen to a muscle contracting, we hear a bruit comparable to that of a carriage passing over thirty-two paving-stones per second.

The experiments of Marcy and Helmholtz have shown that whenever a muscle receives less than thirty-two shocks per second, there was no tonic continuous contraction; this was, on the contrary, interrupted, and *trembling* then takes place.

We see, then, that in cases of paralysis agitans, general paralysis, and among alcoholic cases, &c., there is diminution and weakening rather than augmentation of the excito-motory cause, for there are fewer shocks than necessary for determining the normal muscular contraction.

Nevertheless, in spite of the considerable diminution of the excito-motory cause, we sometimes see persons with general paralysis give proofs of incredible vigour. This exceptional fact occurs only when the patients are greatly excited; then the trembling disappears for a moment to give place to an excessive muscular effort, which permits them to burst even very powerful bonds.

In general, in the case of patients with general paralysis, it is above all in the tongue and lips that the trembling shows itself. If you tell the patient to put out the tongue, you will see, especially if you watch for two or three minutes, slight fibrillary vermicular movements, very different from those quick and renewed shocks seen in the case of a drunkard lately examined.

The lips, especially the upper lip, also share in this trembling, which is yet more exaggerated if the tongue is protruded. This exaggeration is especially seen in the upper lip.

Speech offers important modifications, ignorance of which may make you make errors in diagnosis: thus, the patient in No. 25 pronounces with difficulty the first syllables of words—in a word, he stutters, but not like ordinary stutterers. Among the latter, indeed, the difficulty of speech consists especially in the pronunciation and repetition, with convulsive and more or less numerous attacks of letters or syllables, the articulation of which requires more effort and precision on the part of the organs of the voice and of speech. You have doubtless heard certain stutterers pronounce words with great difficulty, and may have remarked that they repeat several times certain syllables, then rapidly finishing the word, as in fi.. fi.. fi.. fièvre. The patient with general paralysis, on the contrary, hesitates before he pronounces a syllable; he seems to seek for it, then suddenly the rebellious syllable, or even several words, come forth rapidly, like a jet of saliva. There are no oscillations in the speech of general paralytics; there is only shorter or longer hesitation in presence of certain syllables, certain words, and then a veritable expectoration of words and syllables.

These considerable alterations in the motility of the tongue and lips are not the sole important signs to be noted by the medical legist. We indeed see pretty frequently certain automatic movements not ceasing but under a great force of will, and reappearing as soon as the patient's attention is withdrawn elsewhere. Sometimes nocturnal grinding of the teeth is noticed, like those seen in meningeal affections.

Unequal dilatation of the pupils has been noticed by Baillarger at the commencement of the disease.

In general paralysis the muscular groups of the tongue and lips are not the sole ones to be taken into account. The lower limbs and upper limbs are often the seat of considerable troubles, which give rise to different symptoms worthy of being known.

The alterations in motility of the lower limbs give to the walk of paralytics a quite peculiar character. These patients throw themselves forward, with their legs apart, their loins concave, and walk with an air of satisfaction quite remarkable.

If, whilst they are walking, you tell them suddenly to return, their gait becomes at once less assured, they hesitate before putting down their feet, turn suddenly, lose equilibrium, and often fall.

Nevertheless, in spite of this difficulty in walking, it is not rare to see these patients a prey to a certain ambulatory mania, characterised by an immense desire to move about. It is then that they escape from their *surveillants* and set off walking without aim. Almost always their walks terminate in a way disagreeable to themselves. Being incapable generally, either on account of their loss of memory, or their difficulty in speaking, to say where they are going, or whence they come, they are almost always arrested and taken to the police station as suspected persons, and thence to prison, unless the medical legist intervenes at once and restores them to their family or sends them to a lunatic asylum.

Like the lower limbs, the upper limbs may also be the seat of troubled motility. This commences by trembling, but by trembling of a peculiar nature, and very different from that observed among alcoholic patients, or patients attacked with progressive muscular atrophy.

The trembling of patients with general paralysis presents no oscillations in mass, but rather a series of small successive undulations, unequal in length, not rhythmical, but taking place at one time at one point, at another in another.

INDEPENDENT DEPARTMENT.

REMARKS ON PYÆMIA AND ALLIED AFFECTIONS.

By C. A. Gordon, M.D., C.B.,
Deputy-Surgeon General.

II.—Review of the Debate at the Clinical Society.

In the course of the important discussion on pyæmia, initiated by Mr. Prescott Hewitt, the subject incidentally presented itself, how far the affection so-called was or was not a hospital disease, and the term hospitalism came in the course of that discussion to be applied to two different conditions—namely, of the building itself and of administration within it. The fact had indeed long been familiar to surgeons, more especially military surgeons, that a certain class of diseases are of common occurrence in army hospitals in times of war, and that their prevalence depends more upon the number of severe injuries or operations than upon the mere number of patients. The affections which so occur, and to which in war hospitals the ordinary name of *hospital diseases* is applied, include pyæmia, septicæmia (whether one or two different forms of affection), erysipelas, and hospital gangrene. For the present, however, I confine myself to the two former, and shall endeavour to summarise the opinions expressed regarding them by some of the eminent members of the profession who have taken part in the recent debate, or written on this subject, hoping in a subsequent paper to compare these views more at length with the opinions of our French brethren; but the very extent of the subject renders it necessary that I condense my remarks as far as possible.

Mr. Spencer Wells has only seen pyæmia occur in crowded hospitals. His experience extended to Paris in 1848, to the Crimea, and to the hospital at Smyrna. In his own practice, including the performance of more than six hundred operations for ovarian disease, besides others in which the abdominal cavity was opened, he has met with no case of pyæmia in civil practice nor in small hospitals, his definition of pyæmia being that applicable to the disease as usually met with in military hospitals. Dr. Fayrer considers that although the affection occurs largely in both hospitals and private practice, yet it is essentially a hospital disease. He has seen it under the most favourable circumstances, in isolated rooms at the top of well-ventilated houses, and with every precaution that cleanliness and sanitation could devise; for the most part it takes place in the presence of suppuration, but not healthy suppuration, and when men are crowded together. Messrs. Prescott Hewitt and Holmes express the opinion that pyæmia is relatively not more frequently met with in hospitals than it is in private practice, whereas, Messrs. Erichsen and Cadge are of opinion that the affection is intimately, if not necessarily, associated with hospitals. According to the former it has for years back proved fatal in an average of about thirty-six per cent. of all the deaths after amputation performed in London hospitals; according to the latter, it had been on the increase in the Norwich Hospital for many years back, notwithstanding all that had been done to improve the drainage and ventilation, this increase being attributable to overcrowding, and to the large number of serious wounds and injuries thrown in the hospital.

Dr. Samuel Gross, of Philadelphia, gives a concise history of pyæmia. According to him, Ambrose Paré was the first surgeon to notice the conditions to which the name is now applied, that name being a corruption of the French *pyohœmie*, applied to it by Velpeau in 1823. Not only does Dr. Cross recognise its frequency after severe wounds, but remarks that it is a source of mortality among women in the puerperal state, and further, that it occurs after erysipelas, carbuncle, small-pox, scarlatina, typhoid fever, and gonorrhœa. All ages are liable to it, he having seen the affection in an infant. It is more frequent among inhabitants of towns than those of the country, and in hospitals, almshouses, and other receptacles for the poor, than in private practice. Mr. Erichsen entertains very similar views. He believes, that as overcrowding of uninjured persons will produce some variety of typhus, so will overcrowding of wounded develope septic disease in some form, as hospital gangrene, septicæmia, pyæmia, or erysipelas, and that the poison of these affections, however generated, is capable of transmission through the medium of the atmosphere. With reference to this expression of overcrowding, however, it seems to me that a misconception may arise in regard to it; for example, in the ambulance of the Grand Hotel in Paris, there was seldom more than one, or at the most two patients in each of the small apartments used for their accommodation, so that each patient had an ample amount of cubic and superficial space; as, however, these apartments communicated directly with each other, the same ultimate results were produced that would have arisen from actual accumulation of wounded in insufficient space. Mr. Erichsen is of opinion, that like erysipelas, pyæmia chiefly prevails in seasons and periods during which diseases of a low type are most common, cachectic and unhealthy persons being those who are most subject to it. These views obtained confirmation by what was observed in Paris. Not only did the affection increase according to the increase of debilitating conditions incidental to the siege, as fatigue, exposure and famine, but as a rule, the more robust and healthy the patient, the longer did he appear to be capable of resisting the attack of the affection. He considers that it is more common in adults and elderly people than in children, although the latter are by no means exempt from it. He observes that although it is more frequently met with in hospitals and towns than in civil practice or the country, yet that cases occasionally present themselves in the latter conditions, and even among the wealthier classes. He believes that it does not occur as an idiopathic or primary affection; but, as observed by other writers, there are limitations to this rule. Thus, Mr. Hutchinson considers that there can be no doubt in regard to the autogenic origin of pyæmia in some of the cases seen by him, many patients being, he says, admitted into hospital with the symptoms well-marked upon them, including children with acute periostitis of the long or flat bones; men with laceration of the scalp and contused wounds; and, moreover, it is met with not only in the human subject, but in the lower animals. M. Verneuil believes that it may be developed spontaneously from decomposing organic matter on the surface of a wound, but that it does not necessarily affect the person producing it, and M. Démarquay not only believes that it occurs idiopathically, but that whenever it does so, the presence of osteo-myelite will always be found in post-mortem examination. He further observes that it appears in connection with sundry low forms of suppurative inflammation, and that it is especially apt to occur where decomposing pus is confined among deep tissues; wounds of veins, bones, and joints, are thus most liable to be followed by the disease. Mr. Callender looks upon pyæmia as being like septicæmia, due to the action of irritating fluids poured out in a wound during the first twenty-four or thirty-six hours after the receipt of the injury; from the decomposition of residua, whether sloughs or matters passed into a putrid state, or from clots being disintegrated, as sometimes happens in the case of contusions without external wound. Among other causes of the affection he enumerates the constant admission of cases of severe injury into the same ward or building, mental anxiety, the presence of gonorrhœa, as happened for example in a case related by Mr. Durham, and the existence of uterine discharges in women, as after parturition, and from disease of the matrix. It may perhaps become a question for discussion hereafter how far other discharges may lead to the same results, but for the present I refrain from further reference to this point. Dr. Burdon Sanderson alludes to the certainty that it is not always dependent upon external causes. Mr. Carter, adverting to a case of gonorrhœa in which pyæmia occurred, observes that a patient may become poisoned from a cause within himself, and that he may therefore become a source of poison to others. Dr. Stewart has seen the affection take place in typhus fever, and as a sequel to that disease, the symptoms and post-mortem appearances being the same as in the traumatic form. It is also asserted that furunculus, ecthyma, &c., ordinary sequences of typhus, are but forms of pyæmia, and that its occurrence may happen in cases of malignant pustule. Dr. Fayrer is altogether opposed to the affection being looked upon as a surgical disease only, and regards it as not more surgical than medical or obstetrical. He has seen it take place in people who are ill-fed, live in crowded neighbourhoods, and are otherwise under unfavourable sanitary conditions. He has under such circumstances seen the affection occur without the presence of a wound—in other words, idiopathically, but in a form different from what it assumes when following wounds of the bones, and especially where the medulla is involved. As to the local changes, and in what manner they become constitutional, the present state of knowledge does not enable us to form an opinion. Dr. Moxon considers that the question, how a sore shall develope pyæmia? is so like the question, how a tumour shall develope a general carcinosis? that it would be very difficult for anyone to define the difference. He asks the question, why should one person with gonorrhœa, for example, get pyæmia, when so many thousands escape? and attributes the circumstance to "something very special in the constitution of the individual," although of what that something consists, it is obviously for the present beyond our power to state. He relates two such cases. He had examined the urethra in both, and had found no breach of the mucous membrane. Such cases accordingly appeared to him parallel with scarlatinal rheumatism succeeding scarlatinous inflammation, but without ulceration; and in support of his views, cites some statistics by Dr. Braxton Hicks, the result of which was to show that sixty-five per cent. of cases of puerperal fever were traceable to direct exposure to measles, scarlatina, or diphtheria. Then again, whereas the majority of speakers at the Clinical Society were of opinion that true pyæmia is followed by abscesses of the viscera only, Mr. Prescott Hewitt would by no means limit the term to these, but include also those in which there were external abscesses.

Dr. Hughes Bennet (a) combats the propriety of the name pyæmia as applicable to the conditions usually intended to be thus indicated. He shows that the disease so-called is not necessarily caused by the presence of pus in the blood; that the artificial introduction of healthy pus into the circulation is followed by no injurious effects; that the injection of ichorous matter is followed by symptoms of pyæmia, and that pus, when decomposed or putrid, is capable of producing ichorrhæmia, which, according to him, is a variety of septicæmia. M. Démarquay and others, further point out that the albuminous portion of pus rapidly and spontaneously undergoes the process of putrefaction when exposed to impure air, the products, sometimes acid, sometimes alkaline in their re-action, being capable, when absorbed, of producing this affection. Dr. Bennet observes, that why a particular poison produces the varieties of septicæmia described by him, can no more be explained than why their respective *natures* produce small-pox, measles, and so on, or why, in therapeutics, particular medicines and poisons produce particular effects. Mr. Erichsen believes, that although there is no evidence that pus does exist in the blood as a cause of the affection, yet there is no reason why the migration of the white corpuscles through the smaller vessels, and their transformation into pus should not take place. Dr. Moxon, in describing the autopsy in a case of what he considered to be pure traumatic pyæmia, observed that the crural vein was full of clot, and the clot, when examined by the microscope, was pus. He further observes, with reference to the opinion expressed by Professor Goodsir, that clots in the veins were not pus—that this is quite contrary to his experience.

The attack of pyæmia is usually sudden, often unexpected, and when occurring in a wounded soldier, always in the acute form. As a rule, it may be said to occur from the fifteenth to the twentieth day after the receipt of a wound, and often when to all appearance the injury is progressing favourably. In such cases, however, it is observed that an unusual degree of pain is felt at the seat of injury or operation, more or less œdema of the part, and that the temperature of the body remains high, often with an evening exacerbation, appetite impaired, sleep disturbed, and there is much perspiration. Suddenly, while the progress towards recovery seems satisfactory, the patient is seized with severe shivering; this may

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a) *Brit. Med. Journal*, March, 1874.

continue an hour or more, to be followed by vomiting and violent re-action. The following day the expression is found changed, the surface continues unnaturally hot, the pulse rapid, appetite is absent, the patient complains of great thirst; the shivering returns, the wound changes its aspect, retracts, becomes dry, is painful, so that dressing is performed with difficulty, the bone becomes denuded to a certain extent, the lips and teeth are dry, the skin acquires a yellow tint, the intellect is disturbed, although consciousness is restored on the patient being addressed; delirium follows, the respiration is embarrassed, hæmorrhages take place, either from ligatured vessels or from a surface, and after a variable time the patient succumbs in a period seldom less than four or more than ten days. Among other symptoms recorded we find projection, or "hernia" of the medulla, denudation of the injured bone to a greater or less extent, the discharge from the wound assuming a greyish hue, and being extremely fœtid. The affection may occur at any stage of a wound, its accession being in some instances undistinguishable from traumatic fever, of which indeed, according to some authors, it is an aggravated form. M. Legouest describes some rare cases in which the symptoms appear so far to become chronic that life is prolonged to a period of some twenty days. In such, after the first attack, partial recovery seems to advance, but never beyond a certain point; the attacks of shivering and pyrexia decrease in severity, yet the strength of the patient continues to diminish, and appetite to fail. He describes the symptoms as being local and general in their nature. The local, according to him, include a change in the aspect of the wound, suppression of the discharge, or an alteration in its character, although in some instances such changes do not occur until some days after the general symptoms of the affection have appeared. Sometimes pain occurs in the course of the veins, at others it is absent; sometimes, also, hæmorrhage precedes the other symptoms of the affection. As to the general symptoms, he states that in their early stage they sometimes simulate traumatic fever, at others ordinary intermittent, the patient for a little feeling well after the paroxysm; this, however, is only of short duration, attacks succeeding each other, and the ordinary indications of the disease declaring themselves. The skin and sclerotics become deep yellow, the expression changes, emaciation takes place rapidly, cough commences, respiration is accelerated, the pulse is small and irregular, and the intellect often clear. As the disease advances pain attacks whatever points are about to become the seat of suppuration, the tongue is dry and coated, the teeth and lips encrusted, sudamina form abundantly; in other instances the patients remain free from local suffering. When the lungs are implicated, more or less bloody expectoration takes place, constipation gives place to diarrhœa, the perspiration is offensive, there is restlessness, a state of semi-sleep, and after a time death seems to occur by exhaustion.

With regard to the symptoms of the affection as it occurs in civil hospitals, and as it is described in private practice, I cannot do better than summarise the observations on this subject made by Mr. Hewitt before the Clinical Society of London. After a superficial operation inflammation attacks the wound at the end of a few days, suppuration supervenes, the matter is evacuated, progress seems satisfactory for a few days more, then rigors set in, followed by sweating, but without increase of the local trouble. After a time it is evident that a lung is affected, the condition of the patient is perilous, a violent fit of coughing comes on, a large quantity of offensive matter is brought up, the dangerous symptoms gradually subside, and the patient recovers. Among other cases related, it is observable that a large proportion recovered, the attack being in this respect very different from what is met with in war hospitals. Various symptoms are recorded besides those just related, the list including abscesses in muscles, erysipelas, the latter comparatively frequent, pain and swelling of joints, abscesses in joints, profuse sweating, sodden appearance of the skin, anxious countenance, running pulse, rapid wasting; some of these supervening after an injury or operation, some after an attack of typhoid fever. In all cases, whether traumatic or idiopathic, the attacks of sweating are extremely profuse, emaciation and progress of debility rapid. Other cases are recorded by Mr. Hewitt in which the affection followed abscesses, disease of a bone, discharge from the ear, and gonorrhœa, the affection in the latter cases being extremely severe. Of the cases described by him, 16 out of 23 occurred in town, and 7 in the country, the whole number both in town and country being in patients living at their own homes, the greater number in easy circumstances, and unexceptionally situated as regards hygienic conditions. Very similar symptoms are described by Mr. Henry Smith in the accounts (*a*) he gives of cases of pyæmia in private practice. In that account he describes the breath as being "sweet," the intellect as unclouded, the mind as hopeful, characters different from those observed in Paris, and, according to my view, when taken in connection with what has been related by other eminent surgeons, indicating a difference in character or degree of the affection as met with in the conditions described by them, and as seen in war hospitals. Mr. Erichsen considers that an increase in temperature takes place before the recurrence of rigors, and that even while a patient shivers the temperature is higher than natural. He alludes to the similarity between the affection and ague, and to the possible analogy between them, the one being induced by the presence in the system of animal matters in a state of change, the latter by vegetable matters in similar conditions.

The connection between osteo-myelite and pyæmia, as cause and effect, has for a considerable number of years been admitted on the Continent, and has more recently been, to all appearance, established by clinical observation and experiment. In 1860 Dr. Jules Roux published a work on chronic osteomyelite, in which he stated the following conclusions, in the correctness of which M. Démarquay coincides, namely: 1. That osteo-myelite is inevitable after gunshot wounds, but recovery takes place in the majority of cases; 2. It generally invades the whole extent of injured bone with greater or less rapidity; 3. In the performance of secondary amputation or resection, a portion of the affected bone is often left; 4. Partial and incomplete operations increase the evil, and hasten death, also that they often tend to the want of success

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(*a*) *Lancet*, 14th March, 1874.

of secondary operations; 5. That during six months after a wound, or even one year, if recovery does not take place, and amputation be necessary, disarticulation should be substituted for amputation or resection. In the recent discussion this connection was alluded to by Dr. Fayrer, he at the same time adducing an illustrative case, and one too that is somewhat remarkable, inasmuch as in it the affection seized the femur after amputation through the thigh; amputation at the hip-joint was performed by Dr. Fayrer, and the patient recovered, thus confirming, as it were, the views expressed by the eminent continental surgeons just named. The difference in a bone dead from osteo-myelite and one dead by necrosis, when once observed, cannot again be mistaken. As with the former, so with the latter affection, pyæmia may occur, as pointed out by Dr. Burdon Sanderson, and others, cases of the affection consequent upon necrosis of the temporal bone being mentioned by him, as well as of other bones, to indicate its occurrence without the possibility of its being conveyed from without.

A considerable diversity of opinion seems to exist in regard to the identity or otherwise of pyæmia and septicæmia. According to one set of authors they are but different degrees of intensity of the same disease—that in which the action of the toxic matter producing the affection is so powerful as quickly to kill, constituting septicæmia; that in which its operation or intensity is slower, constituting pyæmia. According to others, not only are they different affections, but they are induced by different matters, and many experiments have been performed upon animals with a view to settle the question.

Mr. Hutchinson considers that in the latter death takes place rapidly, and so soon after the receipt of an injury that phlebitic pyæmia could not within the time have run its course. A rigor ushers in the attack, but it is not repeated as in pyæmia, and after death congestions of the viscera are found, but no abscesses; further, septicæmia does not follow injuries of the bones specially, but occurs after injuries of the soft parts, or as a result of gangrenous inflammation of them. The phenomena of a severe case of the affection suggest the inference that the blood has passed into a state bordering on decomposition, and nothing is more remarkable than the rapidity with which decomposition takes place after death. The cases in which surgeons or students die rapidly after dissection wounds are good examples of *septicæmia*, and often there is in subjects of the affection violent implication of the lymphatic system. In septicæmia also the *materies* upon which it depends has no tendency to cause embolic abscesses, and although it often is produced by decomposing matters introduced, yet it may arise in the system of an individual, and be induced by trivial injuries, and may even, it is believed, in certain cases occur without any wound at all, but simply from cutaneous or pulmonary absorption. Dr. Burdon Sanderson makes some important remarks on this subject. He states that purely septic products never produce the intense irritation which is produced by pyæmic products or by the products of pyæmic inflammation, and, on the other hand, that all pyæmic products lose their irritative property—their property of exciting the tissues to inflammation—by being kept; consequently, according to him, we may entirely separate from each other these two modes of action, the septic action and the action which is dependent upon the peculiar inflammations which are infective. Mr. Spencer Wells is of opinion that the cases described by some other speakers as those of pyæmia were, more properly speaking, instances of septicæmia—that is, a condition in which a cyst, being emptied of its contents and air admitted, the contents left in the cyst, or contents which have formed afterwards, have putrefied, and then the patient has been poisoned by this decomposing fluid, but often recovering, provided the putrefying fluid be withdrawn. In such cases there are no secondary deposits of pus.

Several points of similarity have also been said to exist between the phenomena which follow dissection wounds and pyæmia, the poison in the one case, as in the other, after being once formed, becoming independent of the source whence it comes. In other respects the similarity is observable: violent effects sometimes follow from dressing wounds, and although the danger is for the most part greatest in the bodies of those recently dead, this does not always hold good; the result of a wound received after decomposition has considerably advanced being equally dangerous as in the more recent. As in pyæmia so in dissection wounds, there occur rigors and febrile paroxysms in addition to local symptoms. After death the appearances found are similar to those discovered in fatal cases of septicæmia and pyæmia. Another point of analogy between the affections lies in the fact that inoculation in dissection wounds is most dangerous in cases of specific disease, as erysipelas and peritonitis, which diseases are themselves due to the presence of septicæmic matters, and further, in the circumstance that the virus of each may cling to the hands and clothes, and be thus disseminated.

Although there are cases of pyæmia recorded in which the presence of phlebitis was not detected, and inflammation of the veins is produced artificially with great difficulty, not only is a connection believed to exist between the two affections, but unquestionably this state of the veins, often with the existence of thrombus in their interior, has been observed in the autopsies of patients who have died from purulent affection, although the connection of embolism with the metastatic abscesses that are also found is by no means made clear. Then again, the formation of pus in the veins, so far from being a common result of inflammation, is rare, and, as observed by Mr. Savory, there may be pus without pyæmia, phlebitis without pyæmia, and pyæmia without either pus, thrombosis, or phlebitis. Mr. Hutchinson believes that the visceral and other abscesses in a case of the affection are the result of the embolic arrest of fragments of material detached from primary phlebitic clots; that this material is either in a living state or in the process of decomposition, and capable of setting up suppuration in the site of its arrest; further, that there can be no pyæmia without these fragments, and that they can only be derived from the interior of the veins. It is enough to know, he says, that veins can inflame, and that, as one of the results of their inflammation, clots or concrete masses may form within them, which in turn may break up, and form emboli of the most dangerous kind. He thinks also that it is absolutely impossible to distinguish a pus-cell from a white blood-corpuscle. Continuing the subject, he remarks that the form of phlebitis which causes pyæmia is very different from that in connection with varices in which plugging takes place. In the latter there is no danger of softening or decomposition of the plug; in the former it is softer, and is loaded with cell elements in addition to fibrine, besides being often attended by a gangrenous state of the vein. These plugs, it is observed, may become partially disintegrated and filled with a puriform mass, but not with pus. They may be produced without the presence of an external wound, as, for example, in cases of contusion. They may also occur in chronic disease, besides being the result of the introduction of septic influences inducing secondary deposits, they being in the former cases the results of inflammatory action, in the latter occurring independently of it. In reference to these conditions also it is to be remarked, that thrombosis differs from embolism in that the clot in the former undergoes disintegration, in the latter it does not. Dr. Burdon Sanderson recalls attention to the fact that emboli may be introduced into the circulation without producing phlebitis, may lodge in the tissues without producing any results, even although they consist of fibrine, and that substances which are not large enough to be embolic, nor of a size to plug any vessel, may yet produce pyæmic results. He further points to cases of characteristic pyæmia, in which no affection of the veins of this nature existed, and that the channel of communication of the poison from the first focus to the secondary foci may be either the lymphatics or the veins.

A great divergence of opinion seems to exist among authors in regard to the prognosis of pyæmia, the divergence tending to strengthen the opinion already expressed that the degree or form of the disease differs according to the conditions in which it is observed. Mr. Cadge believes that ninety cases out of every hundred die, the chances of recovery depending upon the power of resistance of the patient. Sedillot reports cases of recovery, and according to others, some cases of partial infection recover through the occurrence of diarrhœa. M. Legouest observes that, although not necessarily fatal, yet he only reports having seen two cases of recovery from it in his experience, and according to Dr. Gross, of forty cases, mostly gunshot wounds, after the battle of Gettysburg, not one of those recovered in whom pyæmia declared itself. On the other hand, in the cases of the affection brought forward by Mr. Prescott Hewitt, as observed in private practice, as well as by other surgeons, recovery seems to have occurred in the great majority. Dr. Fayrer thinks it may not be incurable at times, and in support of this opinion adduces one case, already quoted, in which the affection, having occurred in connection with osteo-myelite, the life of the patient was saved by amputation being performed at the hip-joint.

Mr. Spencer Wells believes that the question of prevention bears more particularly upon that of infection or contagion; that everything must be put aside that is likely to expose the patient to the inoculation of the poison or its reception through the breathing apparatus; doubtless, he would also indicate the importance of hygienic measures such as are most calculated to preserve the system of the patient in a physical condition, the opposite of that which experience has taught us is most conducive to the formation of the morbific influence within or its reception from without. Dr. Fayrer considers that preventive measures are comprised in these: Clean linen, sufficient space, proper nutrition, and good air.

The importance of perfect cleanliness in the treatment of pyæmia is dwelt upon, so also is that of complete rest. In the class of cases and conditions in which the affection is usually met with in civil life, whether in hospital or private practice, it may be advisable and possible to ensure the latter; in military practice, on the other hand, it is not so, and even if it were, the circumstances of a hospital or large ambulance would probably prove more dangerous than the transport or frequent removal to which patients must often be subjected, and which in the case of pyæmia seem to be rather advantageous than otherwise.

According to Dr. Fayrer the post-mortem appearances in cases of idiopathic pyæmia are different from what they are in traumatic. In the former, local gangrenes in great number exist throughout the lungs, frequently in the liver, and not infrequently in the spleen, they being formed in the first instance in the same manner as a portion of the areolar tissue dies under the skin and forms the cup of a boil. In the form of the disease consequent upon peritonitis Dr. Moxon found pus rapidly developed throughout the viscera and in the joints, and in immense quantity.

AT THE SOCIETIES.

Pacatior philosophorum oratio, oratorum pugnacior.—Cic.

AT THE HUNTERIAN SOCIETY.

The question has often been asked in our hearing. What is the use of the societies? And as we devote a good deal of space to the reports of their proceedings we do not like to pass by a reply to this question which was given on the 12th ult., by Dr. Barnes, in the course of his address as President of the Hunterian Society.

It is understood, indeed, that this society does not wish its proceedings reported in the journals, and this feeling has been respected. This it is which gives to our pleasant meetings in the London Institution half their charm. They are partly social gatherings, but none the less do they promote our art. By request Dr. Barnes publishes his address, and we therefore report the reply he made to the above question:—

"It is in our medical societies that men are formed, trained, and moulded to their work. By meeting men who have drawn their elementary knowledge from different hospitals and different schools we learn to discard local prejudices, and to cull the good from many sources. The medical societies offer the best field for the cultivation of those qualities which make up an effective teacher; and more than this: having trained and fitted a man to be a teacher—having given him the opportunity of proving his fitness in the eyes of the most competent judges, their testimony will often carry him by irresistible opinion to the coveted place. In this way our medical societies exert a most wholesome influence in supporting merit against nepotism. No vaporous windbag can successfully encounter the ordeal of a medical society. No dishonest quibbler can escape reprobation and contempt."

Dr. Barnes went on to describe some other advantages of societies, and pointed out that medical science, whose elements are indissoluble, is, by an arbitrary process, cut up into several parts, to each of which a special society is devoted. He admitted that great benefits resulted from this, but he maintained that a society in which medicine is studied in its grand unity offers the purest type of what a medical society should be.

In this we agree with Dr. Barnes, who has thus described the society over which he presided as well as the Medical Society of London, which is the only other equally broad in its aim, a circumstance partly due, perhaps, to the fact that it is the oldest society. This is one reason why we have so regularly reported its meetings; while the space we have devoted to proceedings "at the societies" is amply justified by the words of Dr. Barnes above cited.

AT THE PATHOLOGICAL SOCIETY.

DEBATE ON CANCER.

At this Society a very important debate on cancer was commenced on the 3rd of March, and has continued throughout the month. In giving an account of it we employ as far as possible the phraseology of the speakers; but we have, in accordance with our usual plan, abbreviated the speeches considerably. The debate was commenced by Mr. Campbell De Morgan, who had previously laid on the table a summary of his views of which we avail ourselves. It was as follows:—

The question proposed for discussion is the relations of cancer to the organism generally, and to other morbid growths.

The histology of the disease will be only considered in so far as it aids the purpose of definition.

The treatment of the disease will not be entered upon unless for the purpose of illustration.

The opinions generally held upon the nature of cancer will be stated—viz., that it is a blood disease; a so-called constitutional disease; a local disease; a combination of local and blood disease; a combination of local and constitutional disease.

The view proposed to be maintained is—That the disease, while presenting certain special characters, does not differ essentially in its mode of origin from many or most other morbid growths. That there is no evidence of the disease being caused by, or dependent on, a special condition of either the fluid or solid portions of the blood. That while the actual growth is local in its origin, there may be, and possibly always is, an antecedent of the part or of the system which favours its production. That possibly the germs of the disease may be present from the earliest period of development. That before a tumour is formed, we have no reason to suspect or anticipate the occurrence of the disease, unless, as at times is the case, some local condition be present which we recognise as often preceding the development of cancer. That where a tumour is formed we can explain its spread and recurrence without reference to an antecedent diseased condition of either the fluids or solids of the body. That the structure of cancer specially favours this recurrence, but that most morbid growths show more or less of the same tendency, and some to as great or greater extent than so-called cancer. That if a special state of the blood be a factor in the formation of cancer, we must also believe it to be so in most or all other tumours. That development of local disease determined by an antecedent condition of the system is seen in the simplest forms of tumour, as warts, *e. g.*, and may be merely in obedience to the same law which governs the bodily and mental configuration of the individual. That the fact of retrogression of cancer, while it gives a hope that in discovering its cause we may find a remedy for the disease, does not prove a special blood origin of the disease any more than would a local degeneration of a natural tissue. This is borne out by the fact, sometimes seen, of retrogression of cancer-growth in one part, while in other parts active growth goes on.

MR. SIMON'S SPEECH.

Mr. Simon opened the debate, and stated at the outset his agreement with Mr. De Morgan that the disease did not originate in a blood poison.

The anatomical characters of cancer, he said, are signs of local irritation. It does not produce heterologous products, but abortive forms of the embryonic tissue, therefore it varies with the part attacked. Relapse is no test of cancer, as mere monstrosities may return. Darwin has given cases of the relapse of supernumerary fingers after amputation; they were mere monstrosities. Nor is plurality a test of malignancy, as the scalp may be studded with sebaceous tumours, and the whole body with fatty ones. That which is malignant is, *sui generis*, not a matter of mobility of elements.

The part exercises on the tissues which receive its juices an impregnative, spermatic influence—that is to say, the part causes these other organs to develope after its deranged pattern. Mr. De Morgan thinks that this is transplantation and the growth of the transplanted thing. M. Simon will not say that there is no possibility of the growth of a transplanted bit of cancer—using the word cancer to cover sarcoma. No doubt there is; it would be very odd if there were not. But some observations which have been made by Dr. Crichton on the formation of secondary cancerous tumours have shown something very different from that; they have shown bits of structure undergoing changes in their own elements; not a bit of transplanted tumour growing in them, but the epithelial cells themselves undergoing transformation. One has no more right to deny the specificity of cancer, because the material forms of cancer are not always to be separately identified, than one would have to deny the specificity of small-pox because the fever of small-pox does not materially differ from the fever of measles or scarlatina. For a good interpretation of cancer he looks not at monstrosity tumours, but at tubercle and syphilis.

Recent studies have shown tubercle, in fact, to be indubitably contagious from body to body, as for many years it has been known to be contagious in the body which it possesses, and have traced it into intimate connection with the septic ferments. It can arise from a contagium outside the body. One sees in the case of tubercle the immense influence of the personal predisposition.

Mr. Simon added—I do not pretend to say what the external cause of tubercle is. Of course, we know that it is in intimate connection with septic ferments—the causes that produce septicæmia and pyæmia. Dr. Sanderson has quite established that. Let some animals be exposed to its influence, and they scarcely suffer at all; but let rodent animals be exposed to it, and they suffer almost universally. There you have on a large scale, as a quality of race, as a peculiarity of a whole set of animals, a constitutional susceptibility to a particular morbid poison illustrated. Then look at syphilis: a chancre inoculation on the lip, with affection of the glands, and with tertiary gummosities throughout the body after a certain number of years. Take that as one case; take as the other an epithelial cancer on the lip, with a swelling, probably a softening fungation, of the glands, perhaps an affection after a while in the lung or liver. Do those two cases differ more from one another than one might reasonably expect two species of morbid poisons to differ? Well, do I say that cancer comes *ab extrâ*—that cancer is an inoculation in the part where it occurs? No, I am a long way from saying that. In the present state of knowledge on the subject, I think we are driven to the doctrine that Mr. De Morgan has so well defended and illustrated of the uni-local origin of cancer. We are driven, I think, first of all to recognise that the essence of the disease is the development, as I said, in that spot of a specific impregnative influence. Such an influence is developed in a single spot of the body. What has developed it? We have to choose between two positions: on the one hand, that there has arisen in that spot of the body a property entirely *sui generis*, something for which we have otherwise in the body no analogue; or that there is a contagion from outside. It seems to me that we can hardly escape that alternative. I do not venture to insist upon the doctrine of an external contagium in cancer. But the point I have wished to insist upon, very imperfectly—for this matter ought to be discussed far more deliberately if one wished to do justice either to the argument of Mr. De Morgan or to the one I am stating—the point on which I wish to dwell is that the process followed from first to last is one which brings cancer into relation with tubercle evidently, and with syphilis less evidently, but I think certainly as members of a family of diseases as definite as the family of infective fevers, the family, namely, of chronic dyscrases that arise in local infection. Then whether that local infection in cancer is a local neo-genesis, is a spontaneous product, something indigenous to the body, or is a contagium *ab extrâ* is, as I say, a question on which I would not pretend to speculate.

MR. HUTCHINSON'S SPEECH.

Mr. Jonathan Hutchinson followed, and said that in the belief in the local origin of cancer rests our only hope of dealing satisfactorily with it as surgeons, while patients' interests are prejudiced most seriously by a sort of hesitancy in the belief of this doctrine by a large section of the profession. Mr. Hutchinson wishes to discard the term "blood-disease," and use "constitutional disease," or else "disease of tissues," and he dwelt at length on hereditary influence, asking whether we do not sometimes observe in the hereditary transmission of a cancerous tendency transmutation, and naming as the most definite instance of it, common warts. He thinks patients who are liable to common warts in unusual numbers will generally be found to have relatives who have suffered from cancer. In several remarkable cases in which patients were covered from head to foot with warts, there were near blood relations who had been suffering from cancer. And there has certainly been observed in hereditary transmission the same proof of relationship between the various forms of innocent growths and those strictly malignant. Then as regards hereditary transmission there is another interesting series of facts which should be carefully collected, as to what becomes of the children of parents who were cancerous at the period of birth or of conception. It should be observed also that the kind of cancer is often changed, that the mother who has suffered from cancer of the breast has a child who perhaps suffers from one of the various forms of cancerous action which attack different tissues of the eye. We have come pretty much to the conclusion that the differences in cancers and malignant tumours depend on the tissue which the cancerous action commences in. The cancerous action, if we may be permitted to use such a term, is pretty much one and the same, and the differences depend upon the cell-tissue in which that action begins. We very often see a transmutation in hereditary transmission. That which was scirrhus in the mother becomes, perhaps, soft cancer in the child.

SIR JAMES PAGET'S SPEECH.

Sir James Paget spoke in favour of the constitutional origin of cancer, and pointed out that we cannot doubt that there are some cases in which it is very hard to discern anything like a constitutional origin at all.

If we take those cases, though they be of rare occurrence, in which cancer occurs in scars of old burns—such scars as we see from time to time fretting and ulcerating year after year, undergoing no unusual change, and then at last becoming the seats of cancer—we are almost ready to say that there must have been so little, if any, of a constitutional predisposition to cancer in such a patient, that it required some tissue to be specially prepared through a course of years before it could either become cancerous or in other words, could become the seat of cancer. So, too, if we see the perpetual irritation of a lip which only after years becomes the seat of cancer, it is difficult to say that there has not been hitherto such a condition as required a constitutional predisposition for the production of cancer in it. Nevertheless, even in these cases we not unfrequently observe that after passing a large number of years only as what we may call simple ulcers, or ulcers of various names not implying cancerous disease, they suddenly make a change, and become the seats of cancer, indicating that there may have been some conditions besides mere irritation out of which the cancer has been generated. And so, again, if we look at the regular series of morbid growths which can be traced without any apparent interval whatever from the simplest forms of fatty or fibrous tissue up to the most marked forms of cancer, it may be very hard to indicate the point at which we should maintain that a constitutional predisposition, or any constitutional element has had to be introduced. If these, then, were the only cases to be studied, we might hold almost that cancer may be completely a local disease, needing, if any, only what we may regard as the lowest degree of some constitutional element for its production. But we must look to the further end of the scale before we decide that, and at the further end we find growths unlike any that are produced in the body, rapidly produced, rapidly multiplying, rapidly destroying; things so unlike anything that we can call local disease, purely and simply, that we are bound to adopt another pathology for it; or rather we are bound to believe that in the long group of diseases which we call cancers, there may be at one end diseases in which it is hard to discern any constitutional element at all, and at the other end diseases in which the constitutional element very far predominates over anything that we can suppose to belong to locality. A large number of persons die of internal cancer, and convey it to their offspring, though it is never known that they themselves have been the subject of cancer, or at least never recorded. A large number more die before they have transmitted the cancerous predisposition which is in themselves: for, paradoxical as it may seem, if a man have not outlived the whole age of a man we are bound not to believe that he might not have been the subject of cancer; for cancer is eminently a disease of degeneracy, a disease of which the frequency increases as years increase—that is, in proportion to the number of persons living at each period of life, the number of cancers increases as age increases. The contrast in the manner of inheritance of a local disease and inheritance of a constitutional one is very striking. When a local disease is inherited it passes from progenitor to offspring in the same tissue, if not in the same place. A malformed finger may pass from parent to offspring, but a malformed finger does not generate a malformed heart or a malformed brain. A cutaneous cyst may be inherited from parent to offspring, but it is in the cutaneous tissue. And it is a rule to which, no exception can be made that the transmission of a local disease is of a disease from the same part, if not from the same place, in the progenitor as we find it in the offspring. Now that rule is in no sense a rule of limitation in regard to the transmission of cancer. Cancer sometimes appears, as the expression is, of itself. But in a very large number of cases it follows injury, and sometimes it follows so quickly, in the course of a week, or three weeks, or a month after the injury, that it is impossible to disconnect it from the changes which the injury has produced. Now, we know very well, as well as we know anything in pathology, what is the limit of structure which can be produced by injury in any person of sound constitution. The ordinary processes of repair, and the ordinary changes into which they may deviate without any constitutional condition being present, are as well known as are the ordinary changes of nutrition: either a complete clearing up without change of texture at all, or some inflammatory formation, some thickening, some hardening, some over-growth of some texture like to the natural textures of the body, or, at the most, the production of some tumour which increases and grows on the place of injury, but holds the character of the texture in which it is seated. And when, after injury, there is a deviation from these ordinary changes, we seldom or never entertain a question but that the deviation is due to some constitutional defect in the person in whom it occurs. We see a wrenched knee-joint which does not recover after the ordinary fashion, which swells and remains hot, with thickening of the synovial membranes, perhaps with the formation of abscess. We are as sure as of anything in pathology that that is because the person is scrofulous. We see an injury of a bone, and it becomes the seat of tuberculous deposit. We understand that that is because the person to whom the injury has happened is one with a constitutional tuberculosis. We see an injury done to the foot, and it becomes the seat of a gouty inflammation; of another done to joint or bone, and it becomes the seat of syphilitic disease. In all of these cases our pathology is as sure as any piece of pathology we have; it may be erroneous, but at least it is as certain as any other knowledge that we have, that deviation from the ordinary method of change after injury is because of some constitutional peculiarity in the person upon whom the injury has been inflicted. Now, it is only a reading of the same facts with altered terms which enables us to say that when a cancer comes after an injury inflicted upon a part it is because there was a constitutional predisposition in the patient to cancer. Then next the constitutional element in the origin of cancer is strongly marked in the constancy and in the method of its recurrence after operations—recurrence after complete excision. Mr. de Morgan speaks of it as "almost constant." The cases in which cancer is not reproduced in some form are not more than 1 in 500, but the non-cancerous tumours do not reappear in more than 1 case in 500. The case on one side is as strong in opposition as the case on the other; 1 in 500 may fail in reproduction; but not more than 1 in 500 recurs after removal. But not only in regard to the mere fact of reproduction, but to the method of it, the contrast is very striking. There are certain instances in which tumours that we must call cancerous do reappear in distant parts. These are exceedingly few. The very large majority of the so-called recurrent tumours, tumours which seem to stand in the mid-distance between the cancerous and the non-cancerous, reappear again time after time; they cannot be extirpated except by the complete removal, not merely of the tissue, but of the particular part—the whole part in which they grow. Now, this contrast is really a striking one. Whichever way we look at them, the facts of the method of propagation to distant and dissimilar parts are so strong on the side of cancers that we must assume an essential difference between them and any other tumours that we might name. The question of first importance is, whether cancer does owe its origin to a constitutional as well as to a local condition? whether that constitutional condition be a morbid material in the blood or not is an altogether different question, and does not much affect the main one. If we are to hold constitutional diseases to be all-pervading, what is it which all-pervades? There are not many things which do all-pervade the body. We have the nerves: we can hardly ascribe the constitutional origin of cancer to any morbid condition of the nervous system. That seems, to say the least, very improbable. We have the minute blood-vessels; we have, we might almost say, the organic muscular fibre; we have the connective tissue; we have the blood; and, having named those things, we are at a loss to name anything else in which the all-pervading condition can exist. We cannot talk of conditions separate from the materials in which the conditions exist. We may doubt whether it be a fluid or a germ of any degree of minuteness, but at least it must be something material; and if it be so, where is the material in which these substances all-pervade? It might possibly be in the all-pervading connective tissue, but it seems more probable, and a safer thing to hold, that it is in the all-pervading blood, because at any rate we can then hold our study by some sort of analogy with things that we recognise as being blood diseases. We have some blood diseases that we are sure of. We have no all-pervading connective tissue disease of which we have any knowledge at all, so that if we hold that the constitutional condition of cancer is not in the blood, we drift away into the land of the unknowable—an excellent land to drift to, for all the most inquiring spirits would immediately proceed to find out what there is in that unknowable. But at least we have a set of diseases of which we know something as being blood diseases, and it is with them that the likenesses of cancer are found. The occurrence of boils and carbuncles and other local necroses is as singular an indication of the disturbed blood of diabetes as is a cancer or any supposed disturbance of the blood that we may speak of. Uræmia, with all the local diseases it may produce, scurvy, with the various diatheses which are marked by morbid conditions of the urine, these we all know to be blood diseases with appropriate local illustrations.

MR. ARNOTT'S SPEECH.

Mr. Arnott said he thought that one explanation of the alteration in the manner of inheritance between cancer and other tumours consists in this, that the other tumours, are for the most part hypertrophies of a single tissue. They are not heterologous formations; their structure is very different. For instance, the mother of a number of children has a cancer in her breast: the cancer might appear in any other part of her body; it might appear, for aught we know—although certain investigations proceeding in Germany may correct us on this point—in muscle, in bone, or in any other part of the body. Accordingly, if the mother transmit this tumour taint, this taint of scirrhus, to her offspring, it might show itself in some other part of the body. But if the mother had a fatty tumour—if she had an ordinary lipoma, she could, so far as our knowledge of pathology goes in these matters, only transmit the tumour to her offspring in such sort that the child should have lipoma in the same tissue—not in the same part. When we find, moreover, that the mobility of the elements of a tumour stands in direct ratio to its malignancy, other conditions being the same (setting aside for a moment the fact of constitutional disposition), the observation is one of the very greatest importance, and we should not lightly pass it by. Again, other things being the same, much of the malignancy of certain tumours may be explained by their position, and that in proportion as that position is subjected to the conditions of warmth, of moisture, of great vascular supply, of free lymphatic connections, and of occasional exalted functional activity, do we find that the tumour is likely to be malignant. In other words, epithelioma may attack the forehead at the bridge of the nose, or in the cheek, and remain there a quiet, indolent, passive sore, ulcerating its way, still making very little progress, not affecting distant parts for a period of years; but let the same disease, almost histologically the same, the same in its grosser characters, attack such a position as the frænum of the tongue, or the floor of the mouth, a part which is warm and moist, and has free vascular and lymphatic connections, and occasional great functional activity—let it attack a part of that sort, and we have speedily, almost within a year, the death of the patient, and with, too, an affection of the lymphatic glands under the chin, and possibly deposits of the same epithelium in distant parts of the body. Admitting to the full that there is a constitutional something underlying the local appearances of cancer, we must admit at the same time, that there is a similar or a somewhat analogous constitutional something underlying the simplest tumour; and if, by bearing this fact in mind, and taking into consideration with it the anatomical peculiarities of tumours, we are able to say that such a one should be malignant because of its anatomical peculiarities, or of its position, and that another will be innocent because of its anatomical peculiarities and position, then we need not be driven to search for any hypothesis of a blood disease in the sense of syphilis or gout.

SIR W. GULL'S SPEECH.

Sir Wm. Gull admitted all that can be said about the constitutional origin, but argued that there are undoubtedly local seats of cancer, and challenged the constitutional theorists to say why it should not appear in any particular part of the intestinal tract, and why there should be certain portions of the intestinal tract which it especially and particularly affects. There are certain points which we know it will affect—say the end of the œsophagus, the pyloric end of the stomach, the duodenum; then we get over twenty feet of intestine which it does not affect except secondarily, though it is equally vascular. There are very few primary cancerous ulcers of the jejunum; they now and then occur, but so rarely, that Sir James Paget puts them at 1 in 500, and perhaps they are rather more rare than that. Then we come to the lower end of the ileum, then to the cæcum, then to the sigmoid flexure. The great fact still remains that cancer does show a predisposition to appear in special parts of the body. So soon as the ovum is differentiated into tissue, what is called a constitutional condition becomes a local one. If we could investigate the first beginning of cancerous change, and could take away the part, we should for the time rid our patient of the cancerous tendency in the particular part or place. When you talk of blood disease you are lost in conjecture; and when you begin to explain blood disease by reference to such a disease as gout you are still more lost in conjecture. For there is no proof whatever that gout is a blood disease; nor indeed that typhoid fever is a blood disease. The blood may be a channel of disease whereby certain poisons may affect the texture; but assuming, if it were possible, a man to be all blood, he would not have typhoid fever, and he would not have gout. It is the textures which lie outside his blood that are the seat of those conditions which we call gout and typhoid fever. The blood is a very indifferent fluid; it has elements which are not indifferent—viz., the red and white cells, but quasi-blood is a singularly indifferent fluid; it has to be differentiated into a certain condition of tissue before it can assume and present the morbid phenomena of disease. In conclusion, Sir W. Gull said that if he were to be attacked by cancer, he hoped it would be in his retina, as the defective vision caused by it would lead to the eye being extracted, and he might enjoy a long immunity from the disease.

MR. SQUIRE'S SPEECH.

Mr. Squire thought Sir W. Gull's arguments against cancer being a general disease, tended in the opposite direction, reminding him that fully half the blood is outside the vessels, and that the fluid in the tissues is probably equal in bulk to the fluid of the blood, while between these two there is a continual interchange.

DR. PAYNE'S SPEECH.

Dr. Payne remarked that all observers agreed that cancers of every kind resemble gland structure. The parts once unlike glands have become like them to a certain extent. The quality or mode of growth, or something which has originally belonged to one tissue has passed over to another. There is a duality in its structure, one part being of one kind, and another of a different kind. Then, when any disease or change has bridged the narrow interval that separates one kind of tissue from another, there is no barrier to its course throughout the body. This explains adhesion to the skin. Something which perhaps did not begin in the skin has gone to it and may go anywhere else. He thought in many cases it could be said that whatever its nature, the material which stirs up new growth is transmitted in attachment to cells. At the same time it is always attached to local growth. We do not know if it could exist in a diffuse form. Hence it might partake possibly of both a local and constitutional nature.

AT THE ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

CASES OF (SO-CALLED) ICHTHYOSIS LINGUÆ.

By W. Fairlie Clarke, M.A. (Oxon.), F.R.C.S.,
Assistant-Surgeon to Charing Cross Hospital.

The term "ichthyosis" was first applied to a morbid condition of the tongue by Mr. Hulke in 1864. In its earlier stages the disease has someting in common with warts and corns, and with "papillary tumours of the gum." But it is distinguished both pathologically and clinically from these affections in two ways. (1) It attacks only the tongue and the inside of the mouth; no other mucous membrane is subject to such an affection. (2) It slowly spreads, but gives only slight inconvenience, and no pain. In this state it may remain many years, but sooner or later it assumes the characters of epithelial cancer.

Icythyosis linguæ manifests itself in an overgrowth of the papillary and epithelial elements of the mucous membrane, and it is the dorsum of the tongue which is affected in the majority of instances. In some cases the enlarged papillæ may be seen sprouting up in small groups, in others the whole of the affected surface is smooth, hard, and almost cartilaginous. It presents either a silvery or a snow-white appearance, quite different from any fur which ordinarily covers the tongue. When the disease has once manifested itself, it is very persistent. Though it sometimes responds a little to treatment, and though it varies slightly, it never wholly leaves a spot which it has once attacked.

The essential nature of the disease appears to be that of a chronic inflammation, accompanied by an overgrowth of the papillæ and a loss of power to throw off the effete epithelium. The irritation which gives rise to this inflammation sometimes acts on the periphery of the nerves, and sometimes it is situated between the periphery and the centre. It would appear that any persistent or oft-repeated irritation of the lingual branches of the fifth pair is capable of causing the disease in persons who have a strong inborn tendency to the development of warty growths under slight causes.

If a portion of the ichthyotic coating be examined under the microscope, some increase in the thickness of the epithelial layer is seen, some enlargement also of the papillæ, and a great development of the rete mucosum. Around the bases of the papillæ, and in the submucous and muscular tissues, there is a very abundant nuclear cell-growth. There is also a notable increase in the number and size of the blood-vessels in all parts. When the disease reaches the stage of epithelial cancer, the most striking feature is the development of the rete. It increases enormously at the expense of the papillæ, reducing them in many places to mere threads, and dipping down between them in the form of large club-shaped processes. Towards the termination of some of these processes the cells may be seen to have assumed a circular arrangement, forming the laminated capsules, or nests of cells, that are so characteristic of epithelioma. These points are illustrated by microscopical sections and drawings.

Nine cases of ichthyosis linguæ are related at length, some of which were under the author's own care, while others have been communicated by friends or gleaned from publications. In an appendix eight more cases are briefly noticed. Several of the cases are illustrated by drawings.

The paper concludes with some general remarks upon the disease and its treatment. 1. It is much more common in men than in women. Out of sixteen cases (one being set aside for special reasons) only one was a female. 2. It never occurs before puberty. It is an affection of early manhood and of middle age. 3. Though a venereal ulceration may occasionally be its starting-point, there is no reason to think that it is always associated with syphilis. On the contrary, it is clearly distinguished from the manifestations of that disease. 4. With regard to treatment:—If the disease presents itself in a very early stage, it should be promptly and thoroughly excised. On the other hand, when it has become epitheliomatous, no time should be lost in performing an operation. But during the whole middle period the best thing that can be done for the patient is to study his general health. If any local measures are used they should be of an unirritating kind. If any jagged teeth are present they should be removed. At the same time the patient should be advised to guard his tongue against all sources of irritation, and to pay particular attention to his digestion. Under this treatment the ichthyotic coating often alters for the better, though it is never altogether removed.

Mr. Acton said he had seen many affections of the tongue, especially from syphilis. He was not aware of the disease called "ichthyosis." He had examined the tongue of the patient exhibited, but would call it "psoriasis," an affection which is a common attendant upon syphilis. He had seen icthyosis of the body, and it differed from this on the tongue. One of the most frequent causes, but not the only one, was syphilis; then the irritation from broken teeth, tobacco-pipes, &c. The affection had been noticed in India, and he had seen many Indians who suffered from it. It was not difficult to diagnose before ulceration, but if there was ulceration it was difficult to say whether it was a gummatous tumour or an epithelial cancer till the microscope was used. He would like to hear how the author of the paper distinguished them. He thought, if psoriasis of the tongue was seen early, local treatment did good; if there was ulceration, large doses of iodide and bromide of potassium were useful. The author's remarks on the general treatment were very good. He was sorry to hear that the author considered the disease so fatal.

Mr. Hulke thought the profession was indebted to Mr. Clarke and Mr. Morris for bringing so many cases forward. Ten years ago he brought the first case before the Society. It was not published in the Transactions; and this he the less regretted, as it gave him the opportunity, six years later, of bringing the case with fuller details, and when epithelioma had supervened, before the Clinical Society. The patient was a strong, healthy man. There was no evidence of syphilis in him or any of his family. He (Mr. Hulke) had seen some half-dozen other cases, and in most of them no evidence of syphilis. His strong impression was that, in the majority of cases, syphilis had nothing whatever to do with it. Sir J. Paget had remarked upon the close parallelism between ichthyosis of the skin and the affection of the tongue, and approved of the name ichthyosis. Mr. Clarke had pushed the anatomy farther than he had been able to do, as he (Mr. Hulke) had examined sections six years before epithelioma supervened, and the change was then exclusively confined to the epithelial and the immediately subjacent tissue. He did not quite follow Mr. Clarke when he said the epithelioma was derived out of the ichthyosis. He (Mr. Hulke) had not ascertained it in his own case: for, after trying local treatment, he had cut out the patches, and he then lost sight of his patient, and on his return, after six years, the epithelioma had appeared in the centre of the tongue, near the tip, and he thought not in one of the cicatrices. In no subsequent case could he assure himself of the transition of the one into the other. He joined issue with Mr. Clark as to the inflammatory nature of the affection. It lasted twenty years or more, and was restricted to the corium and subjacent tissue; it was quite soft and pliant, and there was no œdema or thickening, as in subacute inflammation, as in chronic eczema, &c. As far as his observations went, treatment was of absolutely no use. Mr. Clarke's observations and his own agreed as to the supervention of epithelioma. In every case he had watched, epithelioma had followed. Sir J. Paget said the same ten years ago when his case was discussed.

Dr. Fayrer said that cases like those described were often met with in India, more among natives than Europeans. He had not considered all as due to syphilis; the worst were not. He referred to the case of a man aged seventy, who had ichthyosis of the body and tongue. He recovered under the use of arsenic. The affection was often called psoriasis; he thought, when it was exaggerated, ichthyosis was a good name, as resembling that of the skin. Many cases were perfectly hopeless; there was little or no improvement. When there was marked disease of the body, that of the tongue yielded to treatment. Local treatment was of no use. The general health should be attended to, and, if a syphilitic, iodide of potassium should be given.

Dr. Drysdale asked if Mr. Clarke would abolish the term "psoriasis of the tongue." In some cases he had seen there was a history of syphilis. He had seen little relief from treatment. He thought iodide of potassium in large doses should be tried, and chromic acid locally.

Dr. A. P. Stewart said Dr. Neligan's case first drew his attention to this subject, which was one of great importance. A man who wished to insure his life, on examination, had no other affection than this. The directors were advised not to accept him; his life was accepted, and he died of epithelioma following some irritation of the tongue, within twelve months. Dr. Stewart then related four cases which had been under his care. In two death had followed from epithelioma; he had the other two cases still under observation.

Mr. Savory had had two cases under his observation—one a man aged seventy-three, in which the dorsum of the tongue was covered by a mass of the affection; the other, a man aged twenty-eight, where the disease was symmetrical, a patch being on each cheek. It differed from psoriasis of the tongue, which is not chronic and enduring, as this is; then psoriasis is amenable to treatment, and is moister. The paper was an exceedingly valuable one.

Mr. Nayler considered ichthyosis as a congenital affection, and was nearly always seen in the first year of life, and it was to be regarded as a malformation of the skin. None of Mr. Clarke's cases bore out this statement. Every case had ended in cancer.

Dr. Sparks said that, with regard to the microscopical appearances of ichthyosis of the tongue and of the skin, there was a considerable general resemblance, for in both there was epithelial proliferation, increased thickening of the rete Malpighii, and enlargement of the papillæ and their blood-vessels, with a greater or less formation of fine-celled growth in the papillæ. It was interesting to contrast the way in which ichthyosis linguæ appeared to select the districts supplied by the gustatory branch of the fifth with the ichthyotic patches on the skin following certain nerves in a few cases of true ichthyosis which had been recorded. He had seen such a case in which the patches followed the course of three intercostal nerves on the same side. With regard to the development of epithelioma out of ichthyosis, having made the sections for Mr. Clarke, he could state that in one of them the gradual transition from one to the other could be clearly seen upon the border of the true epithelioma, consisting in a thickening of the rete, with an increase of the nuclei in the cells of the lowest layers, and a commencing formation of the so-called nests.

Mr. Arnott asked Mr. Hulke if he could distinguish between psoriasis and ichthyosis of the tongue. Mr. Savory said one was curable, the other not. He thought "ichthyosis" was a term applied solely to a congenital malformation of the skin, and it was a pity to apply it to a local disease of the tongue in adult life. He thought "psoriasis" a better term. Both were met with in, and without, syphilis. When without syphilis it was more inveterate; and so in the so-called ichthyosis of the tongue. The essential difference between ichthyosis and epithelioma was that in the first there was great proliferation of the epithelium covering the mucous membrane, and enlargement of the papillæ, but as soon as the deeper tissues were affected it became epithelioma. He referred to the case of two brothers, one of whom had marked ichthyosis of the body and the peculiar characteristic conformation of the ear, and the other had epithelioma of the tongue following patches of ichthyosis.

Mr. Hulke, in reply, said that the distinction drawn by Mr. Savory was good. He thought the patches of ichthyosis were more stationary than those of psoriasis, which presented a variety of contour. He agreed with Mr. Arnott's remarks as to the change that occurs when ichthyosis passes into epithelioma.

Mr. Fairlie Clarke said that both the names psoriasis and ichthyosis applied to the disease were open to objection. He was not inclined to adopt either, and thought it well to employ a new term, and would prefer to use "tylosis linguæ," a term first employed by Dr. Ullmann. He had been cautious in saying that it was an inflammatory affection; he had submitted his sections to a gentleman, a good microscopist, and he had thought it better to class the affection under chronic inflammation. Dr. Fayrer's case, showing the benefit from the use of arsenic, was exceedingly interesting. He had never seen anything like the patches on the cheek described by Mr. Savory.

Death of Mr. J. L. H. McFarlane, M.B.—The *Students' Journal* says:—An unwonted gloom has been cast over the Edinburgh Royal Infirmary by the death of one of its resident medical assistants, Mr. John L. H. McFarlane, M.D., which took place on March 17th, at the early age of twenty-three.

MEDICAL OPINION.

MERCURY.

ONCE more mercury is forcing itself upon the attention of medical men. A new discussion, or a new series of discussions has been raised, and it is necessary to direct attention to them. First of all, the opinions of Mr. Jonathan Hutchinson have been given to the profession through both the *Lancet* and the *Medical Times.* We therefore, first of all, quote the conclusions to which he has been led :—

> "That mercury is probably a true vital antidote against the syphilitic virus, and that it is capable of bringing about a real cure. That, in practice, a good many cases are really cured by mercury, the cure being proved by the restoration to good health, and in some cases by renewed susceptibility to contagion. That the probability of cure depends upon the stage of development attained by the disease when the remedy is resorted to, and the perseverance with which it is used. That, in order to secure the antidotal efficacy of mercury against syphilis, it is desirable to introduce a considerable quantity into the system, and to protract its use over a very long time. That ptyalism and other evidences of the physiological action of mercury, so far from being beneficial, are, if possible, to be carefully avoided, since they prevent the sufficiently prolonged use of the remedy. That in cases in which the patient shows an idiosyncrasy peculiarly susceptible to mercury, the indication is to reduce the dose rather than omit the drug. That it is impossible to begin the administration of mercury too soon, and that it should be resorted to without loss of time in all cases in which a chancre shows a tendency to indurate. That many cases of indurated chancre treated early by mercury never show any of the characteristic symptoms of the secondary stage. That in other cases of mercurial cure of the chancre in which yet secondary symptoms do occur, they are usually milder than if allowed to develope without specific treatment. That when mercury does not wholly abrogate the secondary stage, it possesses a remarkable power in delaying it. That delayed outbreaks of secondary syphilis are to be regarded rather as proof that the administration had not been sufficiently persevering than that the remedy was not efficient. That it is probable that the risk of tertiary symptoms is in ratio with the severity and prolonged duration of the secondary stage. That there are some grounds for believing that the tertiary symptoms of syphilis are both less frequent and less severe in those who have been efficiently treated by mercury than in others. That mercury cautiously given does not, in a great majority of instances, do any injury to the general health, and that its local inconveniences may usually be prevented. That the doctrine of the real antidotal character of mercury in respect to syphilis ought to lead to much more prolonged administration of it, with the hope of destroying utterly all lingering germs of the malady. That most collected statistics as to duration of treatment and freedom from relapse are misleading, and worse than useless, because usually the treatment was far too short to be effectual. That it has not yet been proved that there are any special forms of syphilitic disease in which mercury ought to be avoided, although, as a general rule, it is acknowledged that it must be used with more caution in all forms which are attended by ulceration than in others. That iodide of potassium possesses little or no efficacy against either the primary or secondary forms of syphilis. That the efficacy of mercury is often most signally proved in cases which have utterly resisted the action of iodide of potassium. That it does not much matter whether mercury is given by the mouth, by inunction, or by the vapour bath, provided that, whichever method be selected, care be taken to avoid salivation, purging, &c. That the doses usually resorted to for internal administration are for the most part too large, and thus often necessitate premature discontinuance of the remedy. That, if one method of administration does not succeed satisfactorily, another should be tried; and that in no case of difficulty should the vapour bath be forgotten."

DR. JOSEPH HERMANN, K. K. Primarartz in Vienna, has written a work on the "Effect of Mercury on the Organism." In his preface he observes that he has spent nearly twenty years on the solution of the point, and this work is the result of his labours. He holds that mercury is not a remedy in syphilis, and the treatment of syphilis without mercury he asserts to be more ancient than the mercurial treatment. The length of cure of syphilis without mercury, he says, is clearly shorter than when the drug is used. When no mercury is used, the number of relapses is notably less than when mercury is used; and the number of deaths is much smaller under the non-mercurial treatment. Non-mercurial treatment leads to complete cure without any further consequences, whilst mercurial treatment entails the severest forms of constitutional syphilis.

The author has treated some 20,000 cases of syphilis in the Wieden Hospital of Vienna, and many also in private practice, and he ascribes most of the severest forms of syphilis to the fact of the patient having, in addition to syphilis, some mercurial poison in the blood.

Parents who have suffered from primary syphilis and not been mercurially treated, suffer, according to the author, not at all in their children, whilst patients who have been much mercurialised have frequently children with appearances of syphilis.

Mercurial treatment, according to Dr. Hermann, gives rise to two forms of diseases—tuberculosis and scrofula.

As to the prophylaxis and cure of mercurial poisoning, we have, firstly, to eliminate the mercury from the system; and, secondly, to cure the disease caused by its presence in the tissues. According to his clinical experience, the author shows that iodine is an anti-mercurial remedy, and the only fundamental one in mercurial poisoning, and when used in sufficient quantity iodides are able to restore the damaged health, whilst the pathological appearances at the same time are made to disappear. He proposes to banish mercury from the Pharmacopœia.

Some papers and discussions at the Detroit Academy of Medicine are reported in the *Review of Medicine and Pharmacy of Detroit*, Feb., 1874.

Dr. Lyons and Dr. Bradley have recently read papers on the physiological and therapeutical properties of mercury, which were followed by an animated debate. Dr. Jenks says that mercury, although a specific for syphilis, must not be pushed too far. Syphilitic patients will do well if, after giving mercury for a time, it be suspended, and tonics given.

Dr. Stewart considered mercury useless in the secondary stage of syphilis, and gives it only in the primary stage.

Dr. Walker believed that mercury is beneficial in the secondary stage of syphilis, but it must not be pushed so far as to deteriorate the blood. He preferred the proto-iodide.

Dr. Carstens considers mercury useful in all stages of syphilis, and in the tertiary when iodide of potassium has proved of no effect.

Dr. Koerper believed that mercury should always be given in syphilis.

Dr. Livermore was in the habit of postponing mercury until the secondary rash appeared, and gives iodide of potassium in the tertiary stage. He thinks that in the majority of cases this is enough, if the iodide be given in large enough doses. He uses the proto-iodide and bichloride of mercury.

Dr. Noyes says that the non-mercurialists claim, with some show of authority, that mercury is not needed even to cure syphilis. He always gives it in the secondary stage, as in iritis, when he gives mercury and atropia. When he commenced practice in New England, it was the custom to give mercury in typhoid and long fevers, and, in fact, in almost every complaint. In this way he believed it had done more harm than blood-letting, and he is convinced that many have been either carried off or permanently injured by it who might have got well without it.

Dr. Panas (*La Independencia Med.*, No. 11, 1874) speaks in great praise of the method of mercurial frictions in the treatment of syphilis. He prefers this method greatly to the internal use of mercury, and has found among patients of the Lariboisière Hospital, of Paris, that it much less frequently produces stomatitis than either proto-iodide or perchloride of mercury. He prevents salivation by enjoining great cleanliness of the mouth and very astringent dentifrices, as well as ordering hot vapour baths, and forbidding tobacco. All mercurial preparations, says Panas, are caustic and irritating, causing, in many cases, gastralgia. But this does not apply to subcutaneous injections of calomel or to frictions. The mercury, in frictions, at once reaches the blood, and is carried into the circulation. He asserts that patients treated uselessly for months by proto-iodide of mercury and sublimate, in doses of two to four pills daily, are cured in thirty-five days by mercurial friction. In tertiary cases frictions often triumph when iodide of potassium has proved inefficacious, as in cases of syphilitic orchitis, one case of which, after fruitless treatment for six weeks with six grammes of the iodide of potassium daily, got well very soon when frictions were used. Frictions are of use also in syphilitic affections of the nerves and in choroiditis. In the syphilis of infants, too, frictions are of unrivalled efficacy. He makes use of strong mercurial ointment in doses of six grammes (ninety grains) daily at bed-time, always at a fresh part of the body, for five minutes. This is covered up all night, and the patient can wash it off with soap and water in the morning. In a time varying from six months to two years a cure may be effected.

Dr. Zeissl, of Vienna, speaks as follows of cases treated by iodine: "These and some similar cases convinced Professor Zeissl that expectant treatment was not suitable for the treatment of syphilides in hospital practice. He resolved to try iodine, and, as the iodide was very dear, he substituted the tincture of iodine, prescribing half a drachm to six ounces of water, and giving a tablespoonful (containing 2½ drops) night and morning. Most affections of the skin and mucous membranes, and changes in other textures consequent on syphilis, yielded to this treatment in from fourteen to forty-eight or fifty days. The pustular form offered most resistance, requiring mild doses of Zittmann's decoction. In severe iritis, also, mercurial frictions were employed, in combination with the use of iodine.

From the various trials made, the conclusions arrived at were that preparations of iodine, with a suitable regimen, will disperse the early manifestations of syphilis, or so abate them that a small number of mercurial frictions complete the cure, which, not being followed by relapse, must be regarded as definitive. An early mercurial treatment will remove the initial symptoms more rapidly than iodine; but the consecutive symptoms quickly yield to iodine. Affections of the mucous membrane and pharynx yield much more rapidly to iodine than to mercury, requiring at most sometimes slight cauterisation. Syphilis is always found more obstinate in yielding in pregnant women, especially when it is contracted at the time of impregnation; and the consecutive symptoms are usually only completely cured after the uterus has discharged its contents. The iodine has, therefore, always to be continued after delivery, and, in some cases, has to be suplimented by a few frictions. It is remarkable that iodine acne and coryza are of infinitely less frequent occurrence under the use of the tincture of iodine than that of the iodide of potassium.

Mr. Berkeley Hill expressed himself greatly in favour of the administration of mercury in cases of true syphilis. Dr. Drysdale had said that the younger men in the profession at present were very sceptical as to the value of long courses of mercury, but Mr. Hill said it was of more consequence that the older men were almost all in favour of mercury in syphilis.

Dr. Ziemsen, who is in charge of a clinique of cases of inveterate syphilis in persons who flocked to the sulphur springs for the cure of terrible forms of the disease, and many of these patients were cured marvellously by being submitted to courses of mercury, after the failure of iodide of potassium and other drugs. Syphilis of great gravity was there treated by mercurial inunctions, and the number of cases to be seen were most instructive. He advised sceptics to go to Aix-la-Chapelle instead of to Christiania.

In Paris, Dr. Alfred Fournier at present advocates a two years' course of mercury in all cases of syphilic, without exception, with intervals of non-administration of the drug every month or two.

Professor Gamberini, the well-known syphilographer of Milan, has lately called attention to the way in which, now-a-days, the iodides of potassium and sodium are prescribed "in all the forms of secondary syphilis," and deprecates such practice strongly. He says: "The iodides are used as if mercury were no longer of any value. I have examined a large number of cases treated in this way, and have been able to prove that ordinarily the iodides are not beneficial, and that the virtues assigned to them are only the expression of the natural pauses in the course of the syphilis. It is my firm belief that the prolonged use of the iodides as an exclusive remedy in secondary syphilis only serves, as a rule, to impoverish the blood, and so to accelerate the appearance of syphilitic chlorosis." Professor Gamberini recommends those who are sceptical of the truth of his assertions to compare for themselves cases as nearly similar as possible treated with mercury and with the iodides.

IN THE LABORATORY.

CHLORAL HYDRATE AND CAMPHOR.

The combination of these two drugs is thus described in the *Pharmaceutical Journal* of the 14th ult. by Mr. J. F. Brown:—

"When camphor in fine powder is rubbed in a mortar with an equal weight of pure crystallised hydrate of chloral, the mass becomes damp, and slowly dissolves to form a syrupy liquid, strongly resembling glycerine in appearance.

"A rise in temperature of about 3° Fahr. accompanies this change, showing that a chemical reaction of some kind must evolve heat more than sufficient to counterbalance the loss of sensible heat which always attends the passage of a substance from the solid to the liquid state.

"No acid or irritating fumes, however, were perceptible during the solution, and the resulting liquid was neutral to test paper.

"It was unaffected by solution of silver nitrate, left a greasy stain when dropped upon paper—permanent for some hours—and retained the taste and smell of its components.

"A slip of paper dipped into it did not ignite very quickly when brought near a light, but burnt with a bright white flame, having emerald green edges.

"It was readily soluble in alcohol and ether, but distilled water converted it into a soft translucent solid, from which, after some time, hydrate of chloral appeared to be dissolved out, leaving the camphor in crystalline grains.

"These facts appear to point to an abstraction of water by the camphor, and solution of the latter in the liberated chloral; but such an avidity for water is not shown by camphor under ordinary circumstances, and the cause of this curious liquefaction is not easily discernible."

The editor of the *Pharmaceutical Journal* adds to this description that—

"Some time since the *Medical Record* quoted from an American source a statement that if camphor be powdered by rubbing it in a mortar with a few drops of spirit, and an equal weight of chloral hydrate added, a liquid is produced which is a valuable local anæsthetic;" and that "Mr. L. Brown says the product is of the greatest value as a local application in neuralgia. Mr. Brown, having employed it during several months, has found great and sometimes instantaneous relief to follow its application in every case. It is only necessary to paint the mixture lightly over the painful part and allow it to dry. The application never blisters, though it may occasion a tingling sensation of the skin. The compound has also been found of great service in the relief of toothache."

CLEANING GLASSWARE.

In the *Boston Journal of Chemistry* Dr. Walz thus describes his method of cleaning glassware used for chemical purposes:—

"The vessel to be cleaned is filled, or if large, rinsed, with a moderately dilute solution of potassium permanganate, the contact of the liquid being prolonged till a film of hydrated manganic oxide has been deposited; the solution is then poured away, and the glass vessel rinsed with strong hydrochloric acid. Chlorine is then formed, but not enough to cause inconvenience; and acting in the nascent state on the organic matters, it speedily converts them into substitution products, which are soluble in the slight excess of acid or water."

ETHEREAL TINCTURE OF IODOFORM.

M. Odin found that when solutions were made in white glass bottles the colour changed after a little time from canary yellow to brown; iodine was liberated, and could be detected by starch paper. This change took place more quickly if the crystals of iodoform were previously pulverised. Of solutions prepared in *red* glass bottles, those made with crystals remained unaltered; those made with powdered crystals changed after a few days. In regard to solubility, it was found that ether of 65° Baumé dissolved 25·195 per cent. of iodoform; 62° B., 18·694 per cent; 56° B., 16·044 per cent. The conclusion was to adopt the following formula:—

Iodoform in crystals, 1 gramme;
Ether of 65° Baumé, 4 grammes.

NOTES, NEWS, AND GOSSIP.

KILLING ENTOMOLOGICAL SPECIMENS.

Professor W. Mattieu Williams, in a note printed in *Nature*, gives the result of some experiments made with the vapours of volatile liquids with a view to finding an expeditious and painless method of killing insects for specimens. Several vapours produced temporary insensibility, but bisulphide of carbon killed them effectually. "My method of applying it," he says, "was to place a few layers of blotting-paper, lint, or cotton-wool, on the bottom of a wide-mouthed bottle, pill-box, or other convenient place of execution; then to pour a few drops of the liquid upon this and confine the insect in the receptacle, which on account of the great density of the vapour need not be very accurately closed. The action of the vapour must be continued a few minutes after signs of life have disappeared, or the insect will recover. The most obstinate of beetles succumb without a struggle, and the most delicate of moths or butterflies are uninjured, provided the liquid itself does not touch them. Butterflies may be killed after they are pinned out, by simply placing a little cotton wool soaked with the bisulphide in a box near to them."

LONGEVITY OF MEDICAL MEN.

According to Casper, the average age of clergymen is 65; of merchants, 62; clerks and farmers, 61; military men, 59; lawyers, 58; artists, 57; and medical men, 56. The medium duration of life in Russia he states at about 21 years; in Prussia, 29; in Switzerland, 34; in France, 35; in Belgium, 36; and in England, 38 years. It has been calculated by some statisticians that under ordinary circumstances, man can live six or seven times longer than the years required to attain puberty. Taking this at the fourteenth year, from 84 to 98 years of age would be the natural life. The *Medical Times and Gazette* lately argued that medical men in England stand high on the scale of longevity. The united ages of twenty-eight physicians who died last year amount to 2,354 years, giving an average of more than 84 years to each. The youngest of the number was 80, the oldest 93; two others were 92 and 89 respectively; three were 87, and four were 86 each, Sir Henry Holland being one of the latter. There were also more than fifty whose average age was between 74 and 75 years.

GLYCERINE IN ASTRINGENT INFUSIONS.

Glycerine has been successfully used for rendering astringent infusions bright. One part of glycerine to nine of infusion of roses is said by the *Boston Journal of Chemistry* to be sufficient. Mixtures of infusion of roses and sulphate of quinia, in which a precipitate of tannate of quinia is produced, may be rendered transparent by a similar addition, as also gargles composed of tannic acid and infusion of roses.

OBITUARY.

Acworth.—On the 17th of March, at Elfinsward, Hayward's Heath, Edward Acworth, Esq., M.D., aged 64.

Arnott.—On the 2nd of March, at Cumberland Terrace, Regent's Park, Neil Arnott, M.D., F.R.S., Physician-Extraordinary to the Queen, in his 86th year.

Blennerhassett.—On the 24th of March, at Knight's Town, Valencia, county Kerry, Ireland, Edward Blennerhassett, Esq., M.D., aged 38.

Bolton.—On the 21st of Feb., E. N. Bolton, M.D., of Percy Place, Dublin, formerly of Providence, Queen's County.

Brown.—On the 24th of March, Henry Brown, M.R.C.S., of Mortlake, aged 77.

Coghlan.—On the 3rd of March, at Kilmacthomas, county Waterford, John P. Coghlan, M.D.

Collins.—On the 19th of Feb., at Mentone, B. G. Collins, L.R.C.P.Ed., Surgeon North Durham Militia.

Dalton.—On the 28th of Feb., in London, Dr. H. G. Dalton, of Demerara, aged 55.

Daniell.—On the 28th of March, at Park Street, Grosvenor Square, London, Octavius Daniell, M.D., Surgeon-Major Bengal Army.

Davis.—On the 23rd of March, at Ludlow House, Ampthill Square, London, James Davis, M.R.C.S., aged 83.

Dillon.—On the journey to Zanzibar with the body of Dr. Livingstone, W. E. Dillon, F.R.C.S.I., Staff Surgeon R.N., second in command of the Livingstone Search Expedition.

Ebbage.—On the 15th of March, Thos. Ebbage, F.R.C.S.E., of York Terrace, Leamington, aged about 60.

Fernie.—On the 7th of Feb., at Kimbolton, Hunts, Thomas Peter Fernie, M.R.C.S.E., aged 73.

Finny.—On the 15th of March, at Downpatrick, of enteric fever, Arthur Benjamin Finny, L.K.Q.C.P.I., Assistant Surgeon of the County Down Infirmary, youngest son of the late Rev. T. H. C. Finny, Cork, aged 20 years.

Hughes.—On the 15th of March, at Bangor, Robt. Hughes, Assistant-Surgeon, Llanberis Hospital, aged 21.

Inglis.—On the 21st of March, at Eastbourne, Thomas Inglis, M.D., F.R.C.S.E., late of the Indian Army, Bengal Presidency.

Keiran.—At Belturbet, co. Cavan, James Keiran, M.D.

M'Farlane.—On the 17th of March, John L. H. M'Farlane, M.B., Resident Physician, Royal Infirmary, Edinburgh, youngest son of the late A. C. J. M'Farlane, Surgeon, of Montego Bay, Jamaica.

Parker.—On the 16th of Feb., S. J. P. Parker, L.F.P. & S. Glas., of Hammersmith, aged 64.

Parks.—On the 22nd of March, at Kilmacow, county Waterford, Richard Parks, L.R.C.S.I., L.R.C.P.Ed., aged 81.

Pearson.—On the 22nd of Feb., Henry Pearson, M.R.C.S.E., of Swinton, near Manchester, aged 86.

Powell.—On the 4th of Jan., at Glen Cove, Long Island, North America, Dr. H. E. Powell (eldest son of H. Powell, Esq., of Winchester), aged 37.

Reed.—On the 7th of March, at Newtownhamilton, co. Armagh, William Reed, M.R.C.S.E., aged 45.

Reid.—On the 4th of Feb., at New York, Dr. Laurence Reid (son of the late Dr. Peter Reid, of Edinburgh).

Roche.—On the 4th of March, Wm. S. Roche, M.B., Surgeon R.N. (retired), of Rectory Place, Woolwich, aged 44.

Swain.—On the 27th of Feb., Thomas Swain, L.R.C.P.Ed., of Newhall Street, Birmingham, aged 55.

Tetley.—On the 16th of March, Sarah Ann, wife of James Tetley, M.D., Belmont, Tor, Torquay.

Todd.—On the 5th of March, John Todd, L.F.P. & S.Glas., of Friockheim, Forfarshire.

NOTICES.

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THE DOCTOR.

LONDON, MAY 1, 1874.

Multum in parvo.

THE GREAT DEBATES.

THE two great topics of the time again claim an unusual proportion of our space. So great, indeed, is the pressure that we have determined to postpone the consideration of such subjects as usually occupy this column.

It would be idle to attempt in a leading article to analyse either debate. Fortunately, we are able to do better than that. We complete to-day our report of the debate at the Pathological Society, on Cancer, which, lengthy as it seems, will be found the shortest that has been published.

The masterly paper on Pyæmia, with which Surgeon-General Gordon has favoured us, not only gives the pith of the debate at the Clinical Society, but marshals the experience of British and foreign surgeons on this interesting subject.

We feel sure that our readers will be glad that we have decided to postpone leading articles in order to do justice to the two great debates.

CHRONICLE.

TRANSFUSION OF BLOOD.

IN the first number of the new German surgical journal, the *Centralblatt für Chirurgie*, we find that Dr. Tabouré, of St. Petersburg, has made twenty-eight different experiments on dogs. In the first eleven cases blood of various kinds of animals was transfused, in all cases defibrinated. The blood of dogs was transfused in two cats, and in seven dogs the blood of calves was transfused, cat's blood was thrown into one dog, and dog's blood into a sheep. In two cases, in dogs, death took place from twenty to twenty-two hours after transfusion of calf's blood, and the author in one case attributed the death to paralysis of the heart, whilst in the second there was œdema of the brain and lungs. In all the rest of the cases the transfusion of defibrinated blood by different species of animals was not only well borne, but it gave the animals strength, like the blood of their own species. The author found the foreign blood to be assimilated in from twenty-four to sixty hours.

In eight cases, again, the leg of a dog was amputated, and great anæmia was caused. In the space of from ten to thirty minutes after the amputation defibrinised blood from calves or sheep was injected. In all cases death was the result from hæmorrhage from the stump. Of two dogs which had blood transfused into them twenty-four hours after amputation, the first outlived the operation, whilst the second died on the eleventh day of acute purulent œdema, and of septicæmia. In one case transfusion of defibrinated calf's blood was made two and a half days before the operation, and it got well in twelve days.

ON THE TREATMENT OF RANULA.

THE operations, says Dr. F. Betz (*Memorabilien*), which have been proposed for ranula are very numerous. In the case of a man, æt. 28, who suffered from ranula so large as to cause a tumour the size of a hen's egg beneath the jaw, Dr. Betz determined to make use of Dr. Kyll's method, and to put a hair suture into the tumour in the mouth, and bring it out in the neck. The mouth was frequently washed out with warm water. The patient was cured in about a year. Dr. Betz thinks that the opening of the fistula in the neck is certainly pleasanter for the patient than when it is made into the mouth. The chief point in this matter is not to take out the hair suture too soon, or relapse will take place.

SWALLOWING A PACKET OF NEEDLES.

PROF. KOSINSKI (*Baueraertz, Warschaw*) mentions the case of a young lady, æt. 17, who said she had accidentally swallowed a packet of from twenty-four to twenty-five needles, of which sixteen were taken out of various parts of the abdomen by a practitioner. The patient complained of great pain in the region of the navel, the bladder and the rectum, and loss of blood from the bowels. Several needles were found in the integuments of the abdomen, and one in the rectum. The needles lay horizontally to the surface of the skin, with the eye upwards. The patient was made to confess she had inserted the needles herself.

Nélaton mentions a similar case in his "Doctrine Chirurgicale," 1842. The patient had on more than one occassion swallowed many needles, which were extracted from the abdominal walls, the bladder and the extremities. After twenty-four years of suffering she died, and there were found numerous needles in various parts of her body.

Otto, in Copenhagen, mentions the case of a certain Rachel Herts from whom 395 needles were extracted without causing severe symptoms.

RICKETS AND OSTEO-MALAKIA.

DR. HERTZMANN (*Wien. Med. Jahr.*, 1874, *H.* 1) says that by continuous administration of lactic acid to dogs and cats, rickets, firstly, and then osteo-malakia may be caused, whilst in rabbits and guinea pigs osteo-malakia may be caused without rickets occurring. Lactic acid, he says, causes rickets as long as the animal is young, and osteo-malakia when it is older.

EXCISION OF THE LARYNX.

ONE of the most remarkable of surgical feats is that performed by Professor Billroth, who, on December 31st, removed the larynx and epiglottis. The result is deserving attention.

Prior to this case this operation had never been performed, though Czermak had pronounced it practicable from an anatomical and physiological point of view.

The patient was a strong man, about forty years of age, the subject of cancerous growths in the larynx, which had repeatedly, after putting him in danger of death from suffocation, been removed by Dr. Störk, with the aid of the laryngoscope. In the beginning of November the new growths extended so far into the anterior of the larynx that their removal from above was no longer possible. As, however, a part of the right vocal cord was present, Drs. Störk and Billroth hoped to preserve this, however imperfect; they therefore opened the larynx from the front, and after removing the growths, applied solution of perchloride of iron to the inner surface. The result of this operation, which was well borne by the patient, appeared at first to be very promising; but in the middle of December new growths were detected by the laryngoscope, and at the end of the month symptoms of asphyxia appeared. On December 30th Dr. Billroth and Dr. Störk decided that the whole larynx was so full of malignant growths that it would be useless to repeat the operation of dividing it and clearing them out; and there was no longer a possibility of preserving any part of the vocal cord. Extirpation of the part would produce no additional physiological defect, and might lead to a radical cure, if the disease were confined to the part and had not reached the glands. Professor Billroth therefore removed the entire larynx. The patient bore the operation very well; he breathed freely through the trachea, in which a tube was inserted; the fever was slight and of short duration; and on the 9th instant the wound was healing favourably. On the 24th the man was reported to be able to eat and drink, and to sit up for several hours daily.

Among the many reports published of the case in all countries, the following, from the *St. Louis Medical and Surgical Journal*, gives interesting particulars derived from a source of great authority:—

Dr. T. L. Stuever, of Vienna, writes to Dr. E. Montgomery, of this city, that a short time ago Professor Billroth extirpated the greater portion of the larynx in a patient at the Vienna Hospital. It seems this organ was very extensively involved in carcinomatous degeneration, and with the hope of saving the patient's life, this very difficult and dangerous operation was undertaken and successfully performed. Dr. Stuever, who is assistant to Dr. Störk, the celebrated laryngoscopist, writes that the latter has invented an *apparatus to supply the place of the excised larynx, by which the patient is enabled to speak distinctly, so as to be audible at a distance of ten feet*, but of course without much modulation of voice. Dr. Stuever also mentions that he can breathe and swallow with perfect ease and composure, and is in every way in a most promising condition for complete recovery.

By this bold and hazardous operation, the distinguished Vienna Professor of Surgery has added another laurel to his crown, and great credit is due to Dr. Störk for the talent and ingenuity displayed by him in supplying an apparatus as a substitute for the excised larynx.

INTERCOSTAL NEURALGIA IN WOMEN.

Dr. Fothergill, writing on the above disease (*Obstetrical Journal*, March 1874), says that the pain is truly neuralgic, that is, according to Anstie, it comes in recurrent waves, or gusts, and is one-sided. I have never seen a case of this form of neuralgia where the pain was on both sides, and but rarely where it was on the right side. It is a left-side pain essentially. It is commonly called "pain in the side," and its truly neuralgic character is overlooked. A patient suffering from this affection gives a history to the following effect: She is weak and feeble, with black spots before her eyes, and has pain in her side and betwixt her shoulders, and very commonly dyspepsia, or constipation. In addition to this she admits more or less reluctantly that she is much troubled with leucorrhœa, and usually has some uterine derangement. In the cases where this is not the case, she is suckling. The doctor's treatment is to give a combination of stimulants and tonics, and specially carbonate of ammonia with the ammonio-citrate of iron in an infusion of quassia. In a little time this may be advantageously changed for sulphate of quinine, muriate of iron and quassia.

The absolutely necessary part of the treatment is the attention to the local discharge. Whether this discharge is vaginal or uterine I do not know, not having investigated the point. The use of the cold hip-bath, or, where this is impracticable, or is badly borne, cold water bathings of the parts night and morning are necessary. To this may be added in more obstinate cases injections, either of cold water or the ordinary astringent mixtures. Without this local treatment is properly followed out the progress of the case will be uncertain and disappointing.

THE DELIVERY OF THE PLACENTA BY SUPRA-PUBIC PRESSURE.

Judging from our own experience and from the number of laudatory papers on this subject, Credé's method of delivering the placenta, or some slight modification of it, bids fair to take the place of every other. The plan which we (*Chicago Medical Examiner*) adopt is as follows: At the maximum of the first uterine contraction after the birth of the child, the fundus of the womb is grasped, through the abdominal wall, between the thumb in front and the fingers behind. It is then to be both forcibly squeezed and at the same time pressed downward and backward. By means of this uterine expression the placenta and membranes are usually at once detached and extruded. Sometimes, indeed, they will suddenly pop out of the vulva, just as the stone escapes when a cherry is compressed between the finger and thumb. Occasionally it will require two or more pains to effect this; but the sooner this plan is resorted to after the birth of the child, the more easy in execution will it be. Those who, like ourselves, practise this method, contend that it offers many advantages over any other. The risk of communicating any puerperal disease is lessened. The expulsion of the placenta and membranes by a *vis a tergo* is more likely to be complete than by traction on the cord. The cord cannot be broken, as no traction is made on it. Adherent placenta is less frequently met with. The introduction of the hand into the womb is avoided, and so, also, as a consequence, is the ingress of air. Finally, the tonic and energetic contraction of the womb following this manœuvre prevents the occurrence of hæmorrhage or of unruly after-pains.

[We can from our own experience speak highly of the above method, and hope it will be generally adopted.—Ed. Doctor.]

LOCAL ANÆSTHESIA BY SULPHIDE OF CARBON.

Dr. Ch. Bernard (*Gazette Méd. de l'Algérie*, No. 3, 1874) mentions the case of an Arab of the plain of Milidja, wounded in the plantar part of the left foot, near the heel, with glass, which penetrated. Six grammes of sulphide of carbon were poured drop by drop on the part, and made to evaporate quickly. In a minute's time the wound was enlarged, and the extraction of a piece of glass two centimetres long was made, without the Arab experiencing any pain.

Another Arab had a large carbuncle on the left of the abdomen. Dr. C. Bernard made use of ten grammes of sulphide of carbon by the spray apparatus, and then made six deep incisions, without any pain being felt.

Another medical man removed his wife's toe-nail, after Dr. Bernard had produced local anæsthesia, by dropping gradually six grammes of sulphide of carbon on the part. The operation lasted two minutes, but gave no pain.

This kind of anæsthesia is very simple and very rapid;

it is preferable to ether, chloroform, or refrigerants. There is no danger to be apprehended, and no disagreeableness when the sulphide of carbon is prepared pure. At first a sensation of great cold is felt, which disappears, and in two or three minutes the part is insensible. In general, the patient has no other sensation than that of fear.

Richardson's apparatus is useful when a large tumour is to be rendered insensible; but it uses up too much of the fluid.

JOTTINGS FROM JOURNALS.

Pills of the Arseniate of Iron.—As arsenic is, in many cases, our sheet-anchor in the treatment of various forms of cutaneous disease, it will be well to bear in mind, from a recent number of the *L'Union Pharmaceutique,* Biett's method of preparing pills of the arseniate of iron, to wit—

Arseniate of iron, 15 centigrammes;
Extract of hop, 4 grammes;
Liquorice powder, 2 grammes;
Orange-flower syrup, enough. Mix.

Divide in 48 pills. Each pill contains 15 milligrammes of the arseniate of iron, and the dose is one pilldaily.

Periostic Cyst of the Superior Maxillary.—An instance of this unusual occurrence is recorded in *Le Progrès Médical.* The subject was a girl of fifteen, in whom the tumour had subsisted for three years. The patient then applied for relief at the Hôpital de la Pitié. After being placed under chloroform, M. Verneuil introduced a trocar, which gave issue to a certain amount of pus. Should a fistulous opening form, it was resolved, in that case to remove the cystic lining.

Chloral.—M. Martineau employs—

Chloral, 10 grammes;
Distilled water, 1000 grammes, mix,

as a topical application in cases of eschar of the sacrum as occurring in typhus fever. He has found this application to improve the aspect and hasten the granulation in these troublesome affections.

Infantile Pericarditis.—A case sufficiently remarkable, because occurring in a child only eight years old, is recorded in the *New York Med. Record.* The case is remarkable in another respect, that the subject had never laboured under rheumatism. There was great hypertrophy, the dulness consequent extending from the second to the seventh rib and to the right of the sternum. The mitral insufficiency, with loud blowing murmur, was very marked. There was also pneumonia of the middle lobe of the right lung. The symptoms at first were mitigated by treatment, but afterwards the dyspnœa became distressing, and the child sank under œdema of the lungs. The case was brought forward before the New York Pathological Society, on the 12th of last November, by Dr. Mary Putnam Jacobi.

The journal here cited does justice to the new form of hypodermic syringe patented by Leiter, of Vienna. The canula is made of steel, gilt or nickel-plated outside, while lined with platinum inside, thus avoiding oxidation entirely.

Elimination of Mercury.—A somewhat remarkable memoir on this subject was brought before the notice of the Société des Sciences Médicales, by M. Icard. From the facts stated, it appears that mercury was detected in the urine, the alvine and other dejections. The vehicles being treated with vapours of sulphur, furnished an insoluble black precipitate, which, being subjected to heat, yielded mercury in globules. Some of the cases reported upon were those of four or five workmen employed to produce on musquets, some sixty weekly, *damas en fongère,* in other words, an imitation of fern spray, by means of thirty grammes of bichloride of mercury dissolved in one litre of alcohol. In the course of the discussion M. Hirtl's case of mercury in the bones of a syphilitic subject was cited, also the instance furnished by Bazsereau, who actually detected mercury to a large extent (*quantité enorme*) in bones removed from an ancient cemetery, bones going back to a period when mercury was administered in excessive doses.—*Lyon Médical.*

Torticollis.—Dr. Fisher relates the particulars of a case of this affection in a boy of eleven. The parents ascribed the attack to cold, and it was at first surmised that there might be disease of the fifth or sixth cervical vertebra. The head of course was twisted, and the features were more or less deranged. The upshot, after some partial attempts, was that Dr. Taylor, assisted by Dr. Christie, divided subcutaneously the right sterno-cleido-mastoid muscle thoroughly. An apparatus to rectify the deformity was applied as soon as the effects of the anæsthetic had worn off. Next day passive, followed subsequently by active exercise, was begun and continued for ten minutes twice daily. There was also a special faradisation of the left sterno-cleido-mastoid and right trapezius, the whole followed by such good results, that on the 22nd day after the operation the patient was permitted to pretermit his exercises for three days. The exercises, however, along with the faradisation, were continued for ten days longer, by which time the flexibility of the neck was completely restored, so that after a couple of weeks no further treatment was, in fact, requisite.—*New York Medical Record.*

Piles.—Professor Billroth describes twenty-six cases, four of which he treated with the actual cautery, and ten with galvano-cautery, and the residue, as pursued by Dr. Houston of Dublin, with fuming nitric acid, all with eminently satisfactory results.—*Wiener Medizinische Wochenschrift.*

Bloodless Operations.—The editor of the *Allgemeine Wiener Medizinische Zeitung* makes some very interesting remarks on Professor Esmarch's method of preventing loss of blood during surgical operations, and contrasts it with the procedure in former days, when red hot knives and boiling pitch were the dreary and indeed only alternatives.

Rectal Bougie.—The term *rectum* was given to the last portion of the intestine some two thousand years ago, under the impression, derived from dissecting the lower animals, that the gut was here straight. This is not the case, and straight bougies cannot therefore be comfortably introduced more than five inches. Professor Andrews of Chicago, has therefore devised a new bougie, a smooth bulb of hard rubber riveted to a somewhat flexible metal staff in the ebony handle, which can be passed in some ten or twelve inches with safety.—*Boston Medical Journal.*

Aortic Pressure.—The *Canada Medical and Surgical Journal* contains a case occurring in Newfoundland, as reported in his practice by Dr. Anderson, in which this resort was had recourse to. The subject was a young woman who had been twelve or fourteen hours in labour with her first child. Delivery by the forceps was followed by very considerable hæmorrhage. This Dr Anderson controlled by the introduction of snow and compression of the aorta, first by the thumbs, and then by a pad and bandage arranged as a spica. The results were entirely satisfactory, and Dr. Anderson wonders that the method, under parallel circumstances, is not oftener resorted to.

The *Pacific Medical Journal* records, as from the *American Medical Journal,* a case of opium poisoning. Every other means had been tried, and death was imminent. Dr. Todd, of West Point, Georgia, then had recourse to one-drachm hypodermic injections, seven in all successively, at intervals of fifteen minutes. Electricity was employed along the spine. Three injections, two drops each, of the tincture of veratrum viridum were also had recourse to. The whisky induced no local irritation, and the patient recovered.

Diabetes.—There are some observations on this subject in *L'Independente* which are deserving of attention. The paper is labelled "*Intorno al metado proposto dal Prof. Cantini per quarire il diabete mellito.*" The professor places his reliance on albuminous, and other food, which do not minister to the production of sugar. He thus confines the sufferer to a regimen of fish, or other marine productions, "*frutti di mare,*" as Italians term them, flesh-meat, and water plain, or acidulated with lactic acid. With this procedure Cantini, it seems, has compassed splendid results, "*splendidi risultati.*" At any rate, the procedure is instructive, and wholly conformable to the more recent conclusions of British practice.

Onychia Maligna.—In the *Raccoglitore Medico* an interesting case of complete recovery from this distressing affection is recorded. The nitrate of lead, according to the discovery of Moerloose, was applied in powder, a bit of the projecting nail being first removed by the forceps. The case was that of a child who had suffered much. After only three applications a crust formed, which was left untouched for five or six days, at the end of which time, the crust being removed, the parts were healed, and the results, in all respects, found satisfactory. The case is described in a letter from Dr. Blessich to Professor Tito Vanzetti.

Digital Compression.—Successful digital compression in an instance of false consecutive aneurism of the femoral artery, caused by falling from a cart on a pointed stake, is registered in the *Raccoglitore.* After three days' compression the tumour was much diminished in volume, and otherwise in a fair way of cure. In short, the patient, Dr. Zotti states, made a perfect recovery, with absorption of the coagula and complete disappearance of the tumour.

TOPICS OF THE TIME.

BRIGHT'S DISEASE AND ITS TREATMENT.

Professor Immermann, of Basle, says (*Sweitzer Cor. Bl. Pr. Arzt.*) that at present three forms of Bright's disease are recognised—1. Acute parenchymatous; 2. Chronic parenchymatous; 3. Chronic interstitial nephritis—the acute and parenchymatous inflammations in irritative process, combined with congestion of the kidneys, taking place in the cells of the parenchyme of these organs. This exhibits itself in the form of swelling of these cells, and in this stage a return to health appears to be still possible, whilst in other cases the end is degeneration and destruction of the diseased epithelium. The difference of the progress of the two varieties rests on the differences of the causative process, which in the acute form is truly violent, but of short duration, whilst in the chronic form it appears for the most part as a product of long-continued destruction. The process from the acute to the chronic form is sometimes remarked. Again, we may completely separate from these parenchymatous inflammations the chronic nephritis which ensues in the cellular tissue of the kidneys, in which the parenchyma of the organs suffers only passive disturbance in the form of atrophy, and strangulation caused by the increase of the stroma. This is the histological analogue of cirrhosis of the liver, and is not to be considered a third stage in Bright's disease, as was formerly thought, but as a disease apart. Bartels has named this form "Schrumpfniere."

Comparatively speaking, the causation of acute parenchymatous nephritis is best made out—scarlatina, cholera, diphtheria, &c., violent chills and wetting, or powerful diuretics; in chronic parenchymatous nephritis, the causes are sometimes malaria, alcohol, and the lasting influence of damp and cold combined. The causation of cirrhosis of the kidneys is quite unknown.

The initial symptoms of acute parenchymatous nephritis are almost always of uræmic nature—vomiting, headache, and somnolence, with which suppression of urine, albumen in the urine, often blood in the urine, and after this, dropsy, are combined. Far less marked is the commencement of chronic parenchymatous nephritis, yet here there are, in addition to a great falling off of strength and nutrition, slight uræmic symptoms, such as headache, weariness, and vomiting, all of which are of importance in judging of the early determination of the disease, since they suggest examination of the urine before the patient becomes dropsical. The commencement of the interstitial nephritis again is quite latent: there are neither symptoms of uræmia, nor any well-marked symptom of disease, whilst not even dropsy is noticed in the early stage of this kidney disease, which often enough goes on unnoticed for years, until a chance examination of the urine taking place reveals the existence of the disease.

As to the diagnosis of the three forms of Bright's disease, there is first of all the behaviour of the urine. In acute parenchymatous nephritis, there is notable lessening of the quantity of urine, going on even to complete anuria, with enormous quantities of albumen. Frequently, also, there is blood contained in the scanty urine, in consequence of the congestion of the organs; cylinders are also seen, which are caused by the fibrinous degeneration of the epithelium. In chronic parenchymatous nephritis the mass of urine is lessened, the specific gravity high, the amount of albumen is notable, as is also the mixture of formed elements of partially hyaline and partly catarrhal character; the appearance of the urine varies according to the relapses. In chronic interstitial nephritis, finally, the quantity of urine is generally increased, the specific gravity and albumen contents are low, whilst the elements with peculiar forms are nearly or entirely absent. If further on there occurs insufficiency of the left side of the heart, the quantity of urine may increase, whilst the amount of albumen increases.

Dropsy follows in acute parenchymatous nephritis almost at once on the occurrence of the disease, and very quickly increases; in chronic parenchymatous nephritis it comes on later, but still early enough, and it occurs in inverse proportion to the quantity of urine, and in direct proportion to the quantity of albumen in the urine. In chronic interstitial nephritis, dropsy may be wanting throughout the whole course of the disease, but generally its appearance is reduced to the later stages, and then it attains seldom the higher degrees.

The hypertrophy of the left ventricle is characteristic of the small kidney, and is very constantly seen; it fails in acute parenchymatous nephritis; it is relatively common in the chronic parenchymatous form.

Uræmia is the most common terminal symptom in the contracted kidney, and again, is almost constantly the initial symptom in acute parenchymatous nephritis; in chronic parenchymatous cases it is, at least in its slighter forms, very common before the dropsy ensues, and further on it disappears again, to appear when there is relapse of the symptoms. It is almost never noticed when the dropsy is increasing; on the other hand, severe uræmic symptoms sometimes come on whilst rapid resorption of dropsical fluid is going on, when diaphoretics are used.

Therapeutics are relatively very impotent in cases of contracted kidney. Neither the cause can be attacked, nor the disease itself, since it is just as impossible to account for the shrivelling and atrophy of the kidney as it is in similar disease of the liver. On the other hand, the functional compensation worked out by the hypertrophy of the heart is of great importance in the treatment.

The guarding against threatening hæmorrhage into the brain and uræmia is most secure, not from any peculiar medication, but merely by watching over the patient's method of living.

In acute parenchymatous nephritis the causative indication most frequently coincides with the treatment of the fundamental lesion, from which this affection is caused in the majority of cases. Besides this, we have in the acute, as in the chronic form of parenchymatous nephritis, to ward off all injuries which are caused by the hyperæmia of the kidneys, and which may call forth an increase and relapse of the inflammation. Hence a most careful avoidal of all catching cold, and forbidding in the diet all greatly spiced articles, as also alcoholic fluids; at the most, small quantities of Bordeaux wine mixed with water are permitted to be drunk. The nature of the disease requires struggle with the hyperæmia, which attains high proportions in the acute forms, and also is not wanting in the chronic forms, especially at the time when relapses ensue. Of a recovery from the anatomical alteration in the cells of the parenchyma we can only speak when we treat of the commencement of the swelling and degeneration of these; all notable alterations are irreparable, and a cure is in the most favourable cases only possible by throwing forth of the dead epithelium.

Among the symptoms of both forms of parenchymatous nephritis, dropsy takes the first place in the chronic; and in the acute, dropsy and uræmia, on account of their dangerous character. These first engage the regard of the physician. Dropsy takes place on two occasions, from loss of albumen and retention of fluid; in the chronic form the first is prominent, and in the acute, Bright's disease, the latter is most important. The retention of the constituents of the urine, and perhaps also of the water, is further a cause of uræmia. The symptomatic indication therefore requires, in both forms of nephritis, after the discovery of the loss of albumen, the getting rid of the water retained and the other urinary constituents, whether by the increase of other secretions which affect the activity of the kidney, or by clearing out of the urinary canals from the cylinders of epithelium, and attacking the swelling of the cells. The most important therapeutic means of following these indications are: the employment of tannin, methodical diaphoresis, and diuresis and the milk cure.

Tannin is given forth as gallic acid by the kidneys, and hence the recommendation of its use as a local astringent in kidney disease is perfectly rational. The use of this same remedy is to be confined to the times and periods of parenchymatous nephritis, in which we can count upon the presence of hyperæmia and swelling in certain regions of the kidney, that is, in which some blood is seen in the urine; the quantity of the urine is lessened, and the quantity of albumen is lessened. This is quite without power in the contracted kidney, or in stationary albuminuria, after alteration of the parenchyma to a great extent.

Methodic diaphoresis is a very important increase to the therapeutics of dropsy. By the artistic production of profuse sweating, not only great quantities of fluid are withdrawn from the body—as much as 2·50 kilogrammes may be withdrawn in two or three hours—but also, as Leube has shown, relatively great quantities of urea and other products of the regressive metamorphosis of the tissues are got rid of, by which we may guard against uræmic blood-poisoning. The flow of blood to the skin which accompanies the diaphoresis at the same time works as an antagonist to the kidney congestion. Professor Immermann uses methodic diaphoresis in the following cases: 1. In hyperæmia as a derivative—*i. e.*, in acute Bright's disease especially, as also in relapses and exacerbations of chronic parenchymatous nephritis, and indeed, whether the patient is dropsical or not. 2. In threatening or present uræmia, and especially when none of the precursors of uræmia are present, since, according to the observations of Bartels and Niemeyer, as the water transudes the urea in the blood may call forth uræmic symptoms.

Methodic diuresis has for its aim a canalisation of the kidney by casting forth of the urinary cylinders and recovery from the swelling of the epithelium. It is to be understood that the strong diuretics—squills, juniper, and cantharides, in which the increase of the urinary secretion is the consequence of an irritation of the tissues of the kidney—are out of the question; only such diuretics are suitable by which, without direct irritation of the tissues, the filtration of the urine in the canals is made easier, or by which the same effect takes place by means of the special affinity of certain salts to the membrane and cells. A mechanical increase of the side pressure in the little canals can be caused by the use of large quantities of distilled water. Professor Immermann has for two years had excellent results from giving the patient daily two litres of distilled water, whilst the patient at the same time partakes of milk in acute Bright's disease. Acetate of potash in large doses is useful.

The milk cure is useful in all cases where the patient can bear large quantities of milk well, both in acute and chronic parenchymatous nephritis. It acts as an easily assimilable albuminous nutriment; by its water and its potash salts, it is a diuretic.

Dr. Immermann, with the view that it is right in such diseases as threaten life to order rules of therapeutics distinctly, combines also in Bright's disease the several active materials into a systematic and active treatment, and uses tannin in all suitable cases at the same time in solution, with methodic diuresis and diaphoresis, and finally the milk diet. The results obtained in the hospital of Basle by this method were extremely good.

SPECIAL DEPARTMENT.

QUARTERLY REPORT ON DERMATOLOGY.

By H. S. Purdon, M.D., L.R.C.P.,

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SEBORRHŒA.

Mr. Cauty, Surgeon to the Liverpool Dispensary for Skin Diseases, in his work on "Cutaneous Medicine," noticed in the March number of The Doctor, gives an interesting account of the diseases of the sebaceous glands (page 236). He describes the different forms of seborrhœa, ichthyosis, and comedones, and recommends as the best solvent for sebum, benzole, used either pure or as lotion. "If," he says, "there are collections in the convolutions of the ear where instruments can only be inconveniently used, pure benzine, applied with a brush, will readily dissolve the sebum, leaving the central black spot quite intact, as a pillar of dirt and hairs in a cavity. If used on the face, back, or shoulders, some camphorated oil, being added to ten times the quantity of almond oil. The mixture should be rubbed into the skin at night. In the morning the benzole lotion should be applied with a sponge or flannel, and afterwards the parts well washed with warm water and soap." He gives the following formula: Benzole, ʒss.; gum tragacanth, ʒss.; aq., ʒviij.

PRURITUS HIERNALIS.

Dr. Duhring describes a new affection under the above name (*Philadelphia Med. Times*, Jan. 10, 1874). The affection consists in a peculiar state of irritability of the skin, which manifests itself in the autumn, or even as late as the winter season. Generally, it first makes its appearance with the advent of our cool October weather, or at about the time of frost. It may, however, not be noticed until later in the season—as late as December. In Philadelphia it commonly occurs towards the latter part of October, and continues usually until the cold weather has been thoroughly established, or even through the winter. Its duration is variable. In some cases it lasts but for a few days or weeks, and then disappears entirely. In other instances it remains present persistently for several months or longer; but it is never present after the cold weather has passed. With spring it always vanishes, to be absent at least until the succeeding autumn. It is rare, however, to observe it continuing in any marked degree through the entire winter. It is an affection of the cool weather only, and more particularly of the fall and winter season. It is never present in the summer months. It is found upon individuals of all ages, from childhood to old age. No particular period of life appears to be more susceptible than another. The outer surface of the thigh and the region of the tibia are more rarely involved than, for example, the calf of the leg. The calves of the legs are favourite localities for the trouble. It attacks both lower extremities symmetrically. Occasionally only the ankles and calves are affected, but in most cases it extends well up upon the thigh. It is not a localised affection—that is, cannot be said to exist upon any given portion of the body exclusively. The sensation may be most intense here or there, as the case may be, or it may move from time to time from one locality to another.

The condition of the sudoriferous glands is difficult to determine, further than that they do not work very actively; but there is no reason for supposing that they are in any serious way deranged, or more so upon these localities than upon other portions of the body. There is no perceptible functional derangement of the skin.

As with other varieties of pruritus, simple rubbing, or scratching with the finger-nails, unless it be excessive, does not produce any great amount of laceration of the skin. The patient may scratch quite severely at night, and yet, upon awaking, find very little trace of the performance. This remark supposes the case to be a mild one. If the case be severe, the scratching will necessarily be violent, and the skin will then show signs of the destructive work which has been done.

HERPES.

M. Onimus related to the Société de Biologie a case of herpes occurring in a patient affected with locomotor ataxy. This eruption M. Charcot believes to be frequently met with in ataxy, and in the case under notice the herpetic vesicles were found on the hands five days before there was any complaint of pain. At the same meeting of the society M. Malassez described a fungus which he had discovered in simple pityriasis of the scalp, and he will return to the subject when he has completed his investigations.

KELOID.

Dr. Juler reports a unique case of keloid simulating fibroma, and illustrated by woodcuts (*Medical and Surgical Reporter*, Dec. 15, 1873). The patient had suffered from the disease for thirty years, it having first appeared when about ten years of age, in a cicatrix following an abscess, in front of the lobule of the left ear. As the tumour increased in size, other integumentary sessile growths made their appearance upon different parts of the body, many of which slowly developed into pedunculated excrescences. The tumours are now present in all stages of growth, varying in size from a coriander seed to a mushroom in expansion, measuring several inches in diameter. They are of a lighter colour than the surrounding skin, becoming lighter by age. They are either distinct, grouped together, or several of them have coalesced. Manipulation gives rise to no uneasiness. The maple tree wart-like excrescences stand out so sharply defined upon the surface of the skin that an observer might at first sight suppose that the excrescences were adhering temporarily to the part of the body struck by them. The skin between the elevations is healthy; there are, however, some pigmentary streaks traversing the skin, covering the serratus magnus, that may or may not be the result of former floggings with a whip. Usually he is free from pain, but occasionally, especially in the day time, he experiences pain in these tumours of a darting, cutting, or tearing character. He attributes the pain which he has had in the head to the tumour upon the left side of the face, which has been twice extirpated, and now has its flattened surface covered by leprous scales. The large excrescences upon the jaws and neck give trouble only by their sense of weight. His sleep is disturbed by the uncomfortable interference of the tumours with his rest. He objects to the tumours being pricked, although when a puncture by a needle is allowed it causes scarcely any pain. He complains most dolefully of an intolerable incessant itching of the skin, which, although endurable in cold weather, becomes incessant and exciting in the months of July and August. Over the gluteal region of the right side, and descending upon the thigh are some nineteen distinct tumours, mostly of a small size. A portion of the diseased structure, which is marked by a tracery of white streaks, and may be pinched up into a fold, commences an inch below the great trochanter of the femur, and extends for a distance of eight and three-quarter inches downwards and inwards, measuring in its widest part four inches. In close proximity to the groin of the left thigh there exists a peculiar arrangement of small nodules, like a cluster of beads of different sizes. Had this morbid condition of the skin invaded the genital organs, it would, as likely as not, have been denominated elephantiasis. The pedunculated tumours have passed through all stages of growth, and being useless to the economy are assuming degenerative changes, partly due, perhaps, to the pressure and local irritation. They present more the appearance of molluscum fibrosum than the cheloid of dermatologists.

APPLICATIONS IN SCARLET FEVER.

We are all familiar with the inunction of lard or other greasy substances in scarlet fever, and which are no doubt beneficial. However, Dr. George Bayles says, in the *New York Medical Journal*:—The extraction of heat by the application of cold is a recognised principle in practice, and the extraction of superfluous heat by the application of a heat-absorbing agent of any description, would not violate the principle. Through my friend, Dr. James R. Leaming, I have been made acquainted with the wonderful heat-absorbing properties of *theobroma* (cocoa-butter). I do not venture too much when I say that, for its refrigerant action in fevers of the major kind, it is an agent cognate to ice-water. Its application must be frequent and lavish all over the cutaneous surface. It is absorbed so rapidly that a considerable time is required to so modify the general surface-heat that any of it will remain upon the skin, thereby showing (when that is accomplished) the skin to have become, for the time being, supersaturated. The effect upon the patient is agreeable beyond expression, and I hope to see it supersede all other forms of inunction. That tossing violence of unrest and distress is at once measurably decreased. The temptation to constant repetition of this inunction is only restrained by the salutary fear that the interior caloric is not diminished synchronously with that of the surface. That it should be is more than desirable. This butter of cocoa has the rare advantage of being a valuable nutrient. Its liberal absorption by the skin is equivalent to a fair share of food taken into the stomach, and normally assimilated. During the desquamative stage it far surpasses lard or oils, being neither so disagreeably unctuous nor offensive to the smell. Indeed, the odour of the body after its use is positively agreeable. It always retains its massive form, ready to be laid aside like a piece of fragrant soap when, for the time being, no longer needed, and its application is to the nurse almost a pastime.

During the period of intensest febrile excitement it is quite right to adopt a sort of *coup-sur-coup* course, so to speak, with this agent, as heat must be withdrawn as rapidly as possible for the comfort and welfare of the patient. Once an hour is as often as I have ever applied it, though it might be used oftener with benefit in some cases, and once in every three or four hours is the minimum frequency it is needed at all. I see no reason why, for similar conditions in other diseases, this admirable, pleasantly-flavoured, heat-absorbing agent may not be used with great advantage.

REMEDIES FOR FURUNCULOSIS.

M. de Savignac says he has always succeeded in effectually checking them by the alternative use of Glauber's salts and arsenic, the latter constitutionally, the former as an occasional purgative.

The *Cincinnati Lancet and Observer* has a note from Dr. C. B. Hall, stating that the following, applied to boils, with a camel-hair pencil or feather, gives great relief in a very short time. The inflamed surface, and a little beyond all round, should be painted with the medicine every fifteen minutes, or as fast as it dries, till a good thick coating covers the part. The throbbing, tensive pain, and the intense tenderness will be promptly relieved; the redness will subside; the smooth, shining integument will shrink and become wrinkled, and comfort will succeed torment. If the boil is in the first stage, it will disappear without sloughing. If slough has already formed, it will be quickly separated, and the cure soon complete:

℞ Tr. arnica flowers, ℥j.;
Tannic acid, ʒss.;
Gum acacia pulv., ʒss. M.

It should be used as soon as prepared.

Whilst a French surgeon recommends, that as soon as there is observed that characteristic redness, round in form and varying in size, with a culminating point in the centre, you are to dip the finger into a little camphorated alcohol and gently rub the suspected part, especially the middle; moisten the finger and rub again, eight or ten times; after which cover with camphorated olive-oil. It is rare for a "blind boil" to resist four applications of this kind.

HERPES GESTATIONIS.

Dr. Bulkley contributes a valuable paper to the *American Journal of Obstetrics*, Feb., 1874, on this exceedingly rare disease. He says that only nine cases are recorded—viz., by Gilbert, Hardy, Chausit, Wilson, Milton, Klein, and Hebra.

Dr. Bulkley believes that—

"The peculiar features of this remarkable disease, as gathered from the preceding clinical histories of nine almost precisely similar cases, recorded by eight observers during a period of twenty years, may be thus summed up:—

"1. There is an affection of the skin directly dependent upon the gravid state of the uterus, which may make its appearance at any period of gestation up to the seventh month, and generally continues until the organ is emptied of its contents, and has in a measure resumed its former state; this eruption is very apt, moreover, to recur at each successive conception.

"2. The cutaneous manifestations are chiefly an intense irritation, consisting of burning, itching, or stinging, and sometimes pains, with the development of erythema, papules, vesicles, and bullæ up to the size of a hen's egg, the majority of the blebs, however, seldom surpassing in size a large bulla of herpes. These vesicles are commonly in groups, but do not follow any definite nerve-tracks, appearing first generally on the extremities, and afterwards involving the larger part of the body. Exhaustion may ensue from the cutaneous irritation, but the disease is non-febrile.

"3. The eruptive disease does not terminate at once after delivery, but slowly retrogrades, by the development of fewer and fewer vesicles at increased intervals, until the disposition thereto ceases entirely. An outburst of greater or less severity is most likely to happen on the third day; it is rare for any manifestations of the disease to remain a month after parturition.

"4. This affection is sometimes accompanied or followed by other neurotic manifestations, as erythema, urticaria, and neuralgia, which may continue in the interval of conception, while in many instances the patient experiences perfect health in the interim.

"5. This eruption has occasionally been the first indication that impregnation has taken place.

"6. The majority of the cases have been uninfluenced by treatment, relief occurring only on the emptying of the uterus.

"7. The children are not, as a rule, affected by the eruption in the mother, although in one case it was accompanied in two instances by a still-birth; here, however, the first eruption was followed by the delivery of a living child, whereas the second conception gave a still-born child without any maternal eruption."

INFLUENCE OF THE ACTION OF THE SKIN UPON THE SECRETION OF URINE.

Dr. Müller (*Archiv. für Exper. Pathol.*) has by the aid of appropriate apparatus conducted a series of experiments with a view to determine what influence, if any, is exercised on the quantity of the urinary secretion by variously modifying the action of the skin.

The influence of cold was ascertained by cold packing and by cold showers. The packing was carried out by means of cloths wrung out of ice-water, which were wrapped around the animal to be experimented on, and were renewed every five minutes. The duration of the experiments varied from ten to twenty-five minutes.

Ex. 1.—Rate of secretion 22 drops per minute;
increased to 27 „ „
Ex. 2.—Rate of secretion 30 „ „
increased to 41 „ „
Ex. 3.—Rate of secretion 24 „ „
increased to 31 „ „

The use of ice-cold showers gave the following results:

Ex. 4.—Rate of secretion 30 drops per minute;
increased to 38 „ „
Ex. 5.—Rate of secretion 27 „ „
increased to 34 „ „
Ex. 6.—Rate of secretion 21 „ „
increased to 30 „ „

The effect of *hot* applications in the form of cloths wrung out of hot water was as follows:

Ex. 7.—Rate of secretion 26 drops per minute;
decreased to 7 „ „
Ex. 8.—Rate of secretion 34 „ „
decreased to 17 „ „
Ex. 9.—Rate of secretion 31 „ „
decreased to 18 „ „

Continuous showers of hot water gave the following results:

Ex. 10.—Rate of secretion 28 drops per minute;
decreased to 4 „ „
Ex. 11.—Rate of secretion 26 „ „
decreased to 5 „ „
Ex. 12.—Rate of secretion 20 „ „
decreased to 4 „ „

The influence upon the secretion of urine of frictions of the general surface and of epispastics (blisters and mustard plasters) was also examined into, but with negative results.

Varnishing the cutaneous surface gave results which were quite unexpected, and in fact seemed almost paradoxical.

In three experiments out of seven a *diminution* of from two to three drops per minute was observed. No increase in the secretion of urine was observed in any case.

Dr. Müller believes that an explanation for this diminution of the quantity of urine following varnishing of the skin may be found in the statement of Laschkewisch, that such varnishing is followed by a general dilatation of the cutaneous blood-vessels, which reduces the pressure on the renal circulation.

The importance of these experiments from a pathological point of view may be appreciated by comparing the figures in the series relating to the effect of hot-water wrappings with the well-known good effect of diaphoretics in Bright's disease.

In the latter, a single packing, as is known, often induces a loss of weight amounting to ten pounds.

That this loss represents just so much work taken off the kidneys is evident from a consideration of the figures just mentioned.

It may be easily understood that an organ which is affected in most cases of inflammation can much more easily be cured if the great local hyperæmia can be remedied, or if even a temporary anæmia can be brought about.

It is self-evident, moreover, that an organ whose entire physiological function depends upon its varying blood circulation could be more easily and quickly relieved from disease if this circulation could for a time be diminished and a temporary rest allowed the organ.—*Philadelphia Medical Times.*

AT THE SOCIETIES.

Pacatior philosophorum oratio, oratorum pugnacior—CIC.

AT THE PATHOLOGICAL SOCIETY.

DEBATE ON CANCER.

THE debate on cancer has been concluded, and its importance induces us to give up the space necessary to render our report complete. The following, therefore, takes up the debate from the point where our last issue left it, as then unfinished.

Dr. Moxon took objection to the word constitutional as implying more than was intended, and used the term general instead. He believed there was no medium, but that every one must hold that cancer is either local or general. He proclaimed himself strictly a localist for these reasons :- First, cancer spreads in the part ; secondly, cancer runs along the lymphatics to the glands ; thirdly, cancer makes its way along the blood-vessels to organs remote through the medium of the circulation. Those are facts which are certain ; there is no hypothesis about them. Let that thought govern your ideas, and then what room is there for any notion that a general state of cancer precedes a process of the kind? If it is at all probable that cancers come in spots, run along the lymphatics, and go away to remote parts, where is the room for any general carcinosis? If anyone conceiving himself to be a generalist allows that, whatever is pervading the the general system, something must have happened in a part, and through that something which has happened in a part the general system is afterwards affected—that it is the affected part and the subsequent results on the general system that cause and constitute carcinosis—then he is a localist.

Following up his argument, Dr. Moxon declared that the primary cancer would resemble the tissue in which it occurred, and secondary cancers would resemble the primary one. This important point he put thus :—

"A man gets a cancer in his rectum ; you examine that cancer, and you find it is a big one. He has got also cancers in his liver ; you examine those cancers, and you find they are little ones. The great cancer in the rectum is obviously prior in time to the minute development in the liver ; the one certainly precedes the other. But when you come to examine the cancers, what do you find? You find that the rectum cancer is rectum tissue. I am sure I may appeal to the experience of many pathologists here when I say that we do find cases of cancer in the colon and rectum whose structure is really that of the Lieberkühn follicles of the mucous membrane of the gut. Well, that would not have been wonderful if, when we went to the liver, we found that the cancer exploding in the liver had taken the shape of the liver tissue, just as when exploding in the rectum it had taken the shape of rectum tissue. The generalist, if he thinks that there is any general state of cancer which comes out locally according to the nature of the part, must expect to find rectum cancer in the rectum, and liver cancer in the liver. But instead of that I have repeatedly seen rectum cancer in the liver. I do not hesitate to say so ; I have seen Lieberkühn follicles of exquisite construction in the liver itself. Lest any one should doubt me, and think that I am drawing on my own imagination, I will bring forward a very common instance. Ten months ago there was a man in Guy's Hospital under my care with a monster tumour in the arm, near the shoulder. The poor fellow went to the bad and died. When we examined him we found in his lungs other small tumours. The bony tumour of his arm proved on microscopic examination to be osteoid chondroma, according to Virchow's nomenclature ; the lumps in the lungs were bony too. There was a vast mass in the arm, and there were little bits in the lung. Obviously, the arm disease had preceded the lung disease. And what had grown in the lung? Why, bone ; and it was in bone that the disease commenced. If it were a general cancer pouring out cancer in the two parts developing according to the part, we should have had lung in the lung and bone in the bone, instead of bone in both cases. Looking at these facts, how can the conclusion be resisted that it was in bone the cancer arose, and that the cancer must be interpreted in this way, that it was the acquisition on the part of the bone of a power of instilling its own nature upon the lung?"

Mr. Erichsen followed, and also proclaimed himself a localist. He took up some points not touched upon by previous speakers. The first of these is the extreme vascularity, not of the cancerous tumour itself, but of the tissues that surround that cancerous tumour. It is well known to all operating surgeons that in removing a cancer, say a scirrhus of the breast, even though it be of small size, not bigger than a walnut, the amount of hæmorrhage to be expected is very considerably greater than in the removal of a tumour of a simple character, say adenoma a dozen times that magnitude ; that you may remove an adenoma as big as a cocoa-nut and have fewer vessels to secure than you will after the removal of a cancer not bigger than a walnut. In fact, very small cancers often furnish a very large quantity of blood. There is an active hyperæmia around the cancerous growth itself, and that hyperæmia Mr. Erichsen looked upon to a certain extent as an argument in favour of the primary localisation of cancer. It must arise from one of two conditions; it must either arise from the irritation produced by the cancer as a foreign body lying in the tissues in which it grows and amongst which it is developed, or it must arise in consequence of the demand made upon these tissues by the active inherent vitality of a self-supporting organism growing in the midst of them, which requires a large afflux of artificial blood for its nourishment, for its development, and for its perfection. So far as the first supposition is concerned it is scarcely tenable, because we find tumours infinitely larger, harder, more irritating, so far as their mere mechanical presence is concerned, than cancerous growths without any of this great vascularisation of the tissues around it. This active hyperæmia of the tissues around a cancer seems then an evidence of the great demand made by that self-supporting organism upon the tissues in the midst of which it is lying, and that so far this condition may be looked upon as favouring, to a certain extent, the idea of the local origin of cancer. But Mr. Erichsen suggested that it has another effect, that it tends very rapidly in the disease to wash the cancer elements into the general circulation, and hence it is that one so commonly finds that constitutional condition, that constitutional carcinosis or cachexia, marked so very early in the disease, almost as soon as the local disease is recognised, contemporaneous sometimes with the recognition of the local disease. And this condition of the circulation around the cancerous tumour is greatly favoured also by the peculiarity of the cancerous growth that it is uncapsuled. That is one of the peculiarities of a cancerous growth, which not only tends also so greatly to favour the general constitutional infection, and that very early in the disease, so tending to confuse somewhat the idea of the constitutional and local origin of the affection; but this want of an enveloping capsule also tends to speedy recurrence after removal. In consequence of the want of an enveloping capsule, there is no limitation to a cancer from the very first moment of its development.

Dr. Crisp confessed he was utterly astonished to hear one remark made by Mr. De Morgan, viz., that, taking a given number of cases of cancer, we should have probably 90 per cent. of them in the uterus and in the breast. He said, "it is well known that cases of cancer of the uterus and cancer of the breast are seldom brought here, because they are common cases; but even taking the 334 cases mentioned in our own "Transactions," there are something like thirty or forty more males than females. But let us take better evidence than this. I made an analysis of the Registrar-General's Returns since 1838, and I find that out of 64,391 cases of cancer, 18,059 were males and 42,137 females. Taking into account the active function of the breast and of the uterus, and, even when in abeyance, the disturbance to which those organs are constantly exposed, I do not think it so very wonderful that we should have more cancer in females than in males. One melancholy fact from these returns is this—that whilst in 1838 there were only 2,448 cases, in the year ending in 1870 there were 9,508, there having been a regular increase every year, with the exception of two." Dr. Crisp said cancer is not at all an uncommon disease amongst our domestic animals. In wild animals there is no case on record, and, although our evidence is very imperfect about uncivilised man, amongst them cancer must be very rare.

Mr. Howard Marsh recalled to the Society that it was not how it spreads, but how it is developed in the primary state, and where it comes from, that was to be discussed. Sir Wm. Gull had said we must look at the ovum in its very first commencement, and we must see how cancer or the tendency to cancer is conveyed to that. Sir Wm. Gull said, in the first place cancer cannot be in the ovum a blood disease, because in the ovum at its earliest beginning there is no blood present. But Mr. Marsh thought surely one may answer that although there is no blood, in the same sense there are no limbs there, but just as the limbs are present prospectively or in the future in the ovum, so is the blood. Therefore one cannot see, if there is a tendency in the ovum to the formation of cancer, why it should not pass into the blood just as it might into the limbs. Sir William Gull had also said cancer might be constitutional in the ovum, but afterwards, it could not be constitutional in the developed body, for we must believe in locality somewhere, and therefore, however constitutional or all-pervading the tendency to cancer may be in the ovum, yet afterwards, when the different limbs and different parts and organs have been differentiated and brought out, we must believe the cancer tendency finds its position in some one of these definite places. But surely the blood in that sense is a locality, and one does not see why, if we must believe cancer becomes localised in one of these positions, it should not pass into the blood as well as into the limbs. Mr. Marsh mentioned cases of cancer brought on by injury, and said it would be a singular coincidence, to say the least, for such patients to be struck at the very spot at which alone they were subject to cancer. Such cases are clear enough if we believe that these people had a general tendency to cancer, which they had perhaps inherited, and that upon the receipt of the injury the tissues injured were so altered that they became there and then an appropriate soil for the development of the disease.

Dr. Greenhow declared it impossible to study cancer without seeing that there is something more than a local condition; that, although it may begin in the locality, there is a something in the system beforehand, a predisposition or hereditary tendency. He did not think the hereditary tendency to a cancerous disposition identically the same as that hereditariness which leads to the development of a deformity; neither has it a tendency like that of gout; it much more nearly resembles tubercle. Phthisis of course is hereditary, as cancer is hereditary. Notwithstanding all that has been done of late years to throw light upon phthisis as arising from various causes, from catarrh, from pneumonia, and what not, we shall all agree that it is occasionally and frequently an hereditary disease; and, like cancer, phthisis sometimes descends to one side of a family only. Looking at these facts he could not help thinking that cancer is a general disease. Three sisters and two brothers in a family died of cancer. Four out of these five cases were in different organs. One had cancer of the œsophagus; another had cancer of the mamma; another had cancer of the uterus; and another cancer of the rectum. He did not remember the site of the fifth. Here is a case in which cancer was obviously an hereditary disease, showing very strong grounds for believing that the disease was in some way or other constitutional. Why cancer, thus being an hereditary disease, should manifest itself locally is not obvious. That is a question yet to be worked out.

Dr. Creighton mentioned his recent investigations, already referred to in the debate. They were made on secondary tumours in the liver, and he found that the point of departure in the liver was the liver-cell itself, and that not in the way of proliferation and multiplication of nuclei, but in the way of endogenous cell-formation—that is vacuolation of the protoplasm of the liver-cell and the differentiation, so to speak, of the products that survived the vacuolation. The conclusion he arrived at was that from liver-cells there might develope not only epithelial cells, but also connective-tissue cells, including spindle cells, as well as myxomatous cells, cylindrical epithelium, and other kinds of epithelium. In all these cases the secondary tumour had a remarkable resemblance to the primary tumour. For example, with regard to the tubercular gland structure, which occurred in the ascending colon, the structure of the primary tumour was reproduced exactly in every respect in the liver, although not at all points equally developed. Again, with regard to spindle-cell sarcoma, the spindle cells were exactly the same as in the primary tumour, and even the melanosis in the primary tumour was to a certain extent continued in the secondary. In a case of giant-cell sarcoma, a sort of epulis growing from the upper jaw, there was in the primary tumour a remarkable arrangement of the stroma, which was reproduced in the secondary. "Indeed, the similarity between the primary and the secondary tumours were irresistible. When these facts are looked at it appears that the relation between primary and secondary tumours is comparable to no other relation in nature than that of parent and offspring, and when the exact histological process is looked at more closely—namely, vacuolation—there is an additional argument in favour of supposing that the influence from the primary tumour which results in the formation of the secondary may be compared to what Mr. Simon called the spermatic influence. It may be a little fanciful, but certainly there is some ground for supposing thet the changes that take place in the ovum after impregnation might very well be compared to some changes in the liver-cell when it begins to assume the character of tumour cells." Dr. Creighton believes that it is to such ordinary conditions as catarrh or the involution and evolution of the mammary gland that we have to look for explanations of tumour occurring in the uterus and mamma. Whatever is constitutional is developed from the primary tumour after it has attained a certain maturity, and the constitutional element is represented in the recurrence of secondary tumours. Further, apart from tumours of the connective tissue series, most cancers are developed in organs of a secreting character, and it is incumbent on us to take into account the fact of secretion. The secretion itself is performed by the agency of cells, and probably by the destruction of cells; and in many cases there may be, besides the vesicular product, a cellular product.

Mr. Rivington said, the question of the relation of cancer to the organism may advantageously be narrowed to these two issues:—First, is cancer of local or constitutional origin? secondly, if it be local or if it be constitutional, or a mixture of the two, what are the elements out of which it arises? By local origin of cancer he meant origin in a part or organ out of the elements of the tissues of the part or some neighbouring part, with the blood of normal constitution, or certainly free from any foreign morbid material. By constitutional origin he meant origin in a part, not out of (for that might give rise to misapprehension), but in connection with some pervading element, whether that element be of tissue or of blood. He found both localists and constitutionalists failed to show whence the disease arises. The former could not point out anything peculiar in cancer cells, while the latter selected the blood as less removed from the unknowable than the tissues. Mr. R. looked to the lymphatic system, which includes all the connective tissues and all the serous and synovial membranes in the body, and all the interstices of organs. The lymphatic system has been well described as one great unravelled gland spread throughout the body. He suggested that a part of this gland might fail, or the whole of it, and fail either temporarily or permanently. The office of this gland is, to collect and reconvert into blood those materials in the tissues which can be no longer of functional service in the part, but are still capable of life, growth, and development. Now, supposing that the lymphatic growth should fail in its office, that those elements of tissue which ought to be taken up and renewed cannot be taken up, but are left in the part, would not a tumour result? Without pretending to bring before the Society a fully-developed hypothesis, he put the matter tentatively. The considerations which directed his attention to the lymphatic system were:—The constant appearance of cancer in the connective tissue of a part and in the interstices of organs—that is, in the primary part of the lymphatic system; as, for instance, in the testicle and in the breast, and in the intermuscular spaces. The proper glandular structure is at first distinct, and, perhaps, spread out around the tumour. The not very infrequent origin of cancer in the lymphatic glands, and not only in one part, but in different parts of the body; and not only that, but there are instances, referred to by Sir James Paget, in which the whole lymphatic system has quickly become cancerous. How are you to explain such cases? Either cancer must be a blood disease, or a failure of the lymphatic system. To this he might add the frequent recurrence of cancer in the lymphatic glands at a considerable interval of time, perhaps some years afterwards. Again, cancer is a disease of parts where there has been great activity and constant tissue changes—alternate increase and retrogression, development and decay, evolution and involution. In such changes an immense stress of work must be laid upon the lymphatics. Cancer is also a disease of imperfect parts, and very liable to arise where there are frequent and profound tissue changes in consequence of local irritations. An old ulcer that is constantly healing up and breaking out again is very liable to cancer. We may suppose that the lymphatic system gets worn out. If Sir James Paget would abandon the blood hypothesis, he might embrace a lymphatic hypothesis; for he said that he could conceive that cancer might be due to a morbid state of the connective tissue, and a failure of the lymphatic system would really account for many phenomena that now puzzle us.

Dr. Broadbent observed that we do not find that cancer has its origin in a general carcinosis; the cachexia results from the effects of local manifestations, and he added that, of all diseases which are transmitted hereditarily, there are no more striking instances than those of the nervous system; but we do not find any diseases of the nervous system that are clearly diseases of tissue. In looking back for neurosis in a family, we should have, as evidence of the neurotic tendency, epilepsy, migraine, neuralgia, insanity, and a variety of other disorders. He said that Sir J. Paget had called cancer a disease of old tissue, and spoken of the breast and uterus as old, inasmuch as their function is over long before those of the rest of the system. This is clearly making it a tissue disease—which is the point at which the localists are aiming—not a general disease.

The President, Sir Wm. Jenner, dealt with many of the arguments that had been put forward, but we have only space for some of the most important. Thus, he said: "I have heard certain statements; I own I am not prepared to deny their truth; that the speakers believe them to be true I have not the least doubt, but that they are accurate observations I confess I have a sort of lingering doubt. For example, Dr. Moxon, for whose remarks I have a most profound respect, and who, I am sure, is always listened to in this Society as he deserves to be, stated that he found the crypts of Lieberkühn in the liver. Now, the crypts of Lieberkühn are not mere cells. I can understand the germs of those cells being there, but that there should be identically the same arrangement, that there should be the basement membrane there, that there should be a complicated structure with its vessels (and without that it would not be the crypts of Lieberkühn at all), I cannot quite understand. I do not say that he is not correct, but I feel that I should not be a judge if I saw it myself. I should think that I had it subjectively in my own mind, and that I probably projected it on to the field of the microscope, and that I saw it objectively, so that if I saw it myself I should mistrust my own observations. Sir W. Gull had spoken of the blood as an indifferent substance, and that it does not very much matter what our blood is. Now, against this doctrine I would protest with all my might. I would appeal to any of you who have ever examined the blood in a truly malignant disease—I do not mean cancer, but I mean, for instance, malignant small-pox—where you could not point to a single special lesion of tissue, and where the patient dies within a day or two. I have seen in such cases a solution of hæmatosin oozing from the eyes, nose, mouth, chin, and every organ and outlet of the body, and the patient has died without a single spot on the surface. Is that blood unchanged? Is that condition of blood a matter of indifference? Surely every tissue in the body must be dependent for its nourishment on that blood, and if it is in such a condition it must surely interfere with the patient's life. What do you see if you put a drop of such blood under the microscope? When I was engaged in this work I saw repeatedly that the structure of the corpuscles was changed, and not only their structure, but their relations to each other. They ceased to form themseves into rouleaux, and they aggregated themselves into bundles—simple heaps. The liquor sanguinis was dyed with a solution of hæmatosin. Then take the cases of spontaneously coagulable blood. The blood coagulates again and again, until at last it coagulates in some part a channel through which is essential to life, such as the lung, the pulmonary artery, and the brain, and the patient dies. Here there is no change of tissue in the vein until it is subsequently inflamed from over-distension. I cannot regard the blood as an indifferent fluid. I regard it as a fluid of the highest importance, not merely the corpuscles, but the clot itself. It is not merely the solid particles that are coagulable, but the liquor sanguinis. Take also those cases of malignant disease—small-pox, erysipelas, and malignant typhus, where the fibrin scarcely coagulates, where the clots are of the loosest description. I think these facts are sufficient to put aside altogether the statement that the blood is an indifferent fluid. Again, Sir William Gull said he had always taught that if a man were all blood he could not have typhoid fever. Now, in the first place, I cannot conceive of so sanguineous a mass; but if I could, I am not sure that if the poison of typhoid fever could commingle with that mass there would not be a change take place in it which would be the first step of typhoid fever. But this I may say, if I could conceive of a man who had no blood, who was all solid, I am quite sure he could not have typhoid fever. If he could not have typhoid fever if he were all blood, and if he could not have typhoid fever if he had no blood, then, as we are made up of blood and solids, we ought not to have typhoid fever at all, and therefore (as someone said to me) 'the worse for typhoid fever.' There was another point referred to by Sir William Gull. He said (and I have long said the same thing) that diseases could not originate in the blood, because they originated in the ovum, being communicated by the parent when there was no blood present. There was no blood in the germ, and therefore, as the germ was impregnated, so to say, with cancer, it could not be a disease of the blood. Well, primarily not. Of course there is something preceding. But an adipose tumour is a disease of adipose tissue. Now, it is clear that the father has given adipose tumour to the child before it has adipose tissue, and that is all that would be meant, that in the process of differentiation the blood became especially the seat. The father, in impregnating the ovum, gives to that ovum a power of development, a power of differentiation ; and in differentiating into the various structures of the body, it will be seen that every structure partakes more or less of the qualities of the structures of the parent that impregnated the ovum. When a person has an adipose tumour, you say that the adipose tumour was inherited, but it was only a part of the general inheritance. He inherited the colour of his eyes, the shape of his nose, the height of his body—he inherited the power of growing more or less into the shape of his father ; and not only so, but each tissue possessed the power of growing on and on in the same direction that his father grew. The father impresses on the child not merely what is there at the moment of impregnation, at the moment when each tissue is differentiated into that special tissue, but he gives to that tissue—that is, to the aggregation of tissues—the power of growing on that he himself possessed, and the peculiarities that he possessed. He also conveys to the ovum or to the child, as it subsequently becomes, the date at which it shall die, and not merely so, but the date in which each of the several tissues shall die—that is to say, the order or the date of degeneration, and what is more, the mode of degeneration. Reference has been made to spreading into adjacent parts, and it has been said that the cells had wandered from the original cancer to a particular part, and there developed. Is it necessary to admit that? Mr. Erichsen likened these cells to the 'Wandering Jew.' It struck me at the time that they were, but perhaps in a different way, very like the 'Wandering Jew.' Many persons believe in his existence, but I have never known any one who has seen him. Mr. Simon referred to another form of growth, and he said he had been asked to remove a simple hypertrophy of the skin, which recurred. He then passed down needles, and around each puncture there came new hypertrophied skin. Now, Mr. Simon did not suppose, nor would anyone else, that these hypertrophies were due to any 'Wandering Jew.' He said he believed he had not removed the whole part in which the hypertophic tendency existed."

Mr. De Morgan, in the course of his reply, said that all that could be said with regard to the constitutional nature of cancer applied equally to the constitutional nature of any, the smallest, growth that can be found in the body. Whatever argument could be advanced in reference to cancer being a peculiar constitutional disease he would advance in reference to a wart or a fatty tumour being a constitutional disease. He agreed with Sir James Paget that cancer is much more hereditary than is generally supposed. All that Sir William Jenner said comes exactly to this point: you have a constitutional tendency—that is to say, you have a certain condition of tissue under which certain changes will readily take place ; but not, as Sir William Jenner says, in all tissues ; because we find in cancer that the original disease will only spring up in certain parts ; not, as stated by Mr. Rivington, or very rarely indeed, in the lymphatic system in the first instance. It is extremely rare to find primary cancer beginning in the lymphatics or the lymphatic glands. It begins externally to them—in the lymphatic spaces for aught I know—but I know little or nothing about that. Mr. Simon agrees with me that in the first instance it is local, but he thinks that there is a certain spermatic influence. The Society will remember, however, the statement made by Dr. Creighton, and also the statement of Dr. Moxon, which was quaintly put, but still I think to some extent correctly, that he had seen rectum cancer in the liver—that is to say, that, whatever the condition of primary cancer may be, you find a tendency towards that same form wherever the cancer disseminates itself. That fact shows that there is not what we should call a spermatic influence, because we mean by a spermatic influence what is understood with reference to the union of the particles of the sexes, that the two particles come together, one impregnating the other, the resultant being the resultant of the two. Now, surely in the case of osteoid cancer, or cartilaginous cancer, or any other form of cancer, if you find that it springs originally as osteoid cancer, that you have it afterwards developed in the liver, in the lungs, and in various parts of the body, still maintaining the characters of osteoid cancer, you would not say that a spermatic influence had been exercised. If it were, you would get the characters of the new tissue in which it was planted—that of liver-cells, the appearance of the tissue of the lung, or whatever part it might come into. But you do not find that. Not that you will always find that a cancer is exactly like the primary one, but you do not find it taking on the conditions of the parts into which it spreads. Therefore I should rather believe that it was an outgrowth of the part, that it comes into a place where it is arrested, where it is fit to grow, and where it grows and grows of itself. It is of the nature of a parasitic growth. Mr. H. Marsh brought forward as an illustration those interesting facts in pathology, showing that a person gets a blow upon the arm or a blow upon the leg, and cancer follows. He says you cannot conceive that a cancer was merely localised in the spot ; that the blow happened to come upon the very spot intending to be the seat of cancer. Certainly not. Any part of the osseous tissue of that subject would be liable to become the seat of cancerous disease under injury. It is almost only in the osseous tissues that we get these rapid growths in the cancer after injury. Mr. De Morgan spoke of a case in which after death the abdomen was full of colloid cancer. Here was a man with cancer developed in the abdomen, and with a great injury to the limb, going on for a couple of months, and yet who was so well that I refused to amputate. Now, where was the general condition there which determined the cancer? Surely, you would say, here you have a disease tending to a certain part of the body, but not pervading the body at large. If the breast is a retrogressive organ, and you get cancer developed because it is retrogressive, why is it that you do not get cancer developed in the opposite breast when it occurs secondarily, when that opposite breast has been going on two or three years beyond the ordinary period, and is, therefore, in a state of greater retrogression? Surely we should expect to find, if the retrogression had much to do with the matter, that the second breast would be as frequently the seat of secondary affection as the first breast was of the primary. But we never find that. That is an answer to Sir William Jenner when he talks about the mode in which cancer is distributed in certain parts. You do not find it in parts where you would expect to have it, but you find it spread here and there at long distances in the lung or in the liver, or in the leg on the opposite side, or in any situation you please, except—where? Except in the situation in which you do find primary cancer almost invariably—that is, in the uterus or in the mamma. A question was asked the other day, as to whether, in the case of children of parents having cancer, there was anything analogous to what was found in syphilis. Certainly not. I have seen many cases in which the patient has died of cancer, and children have been born while the cancer was progressing. I remember the case of a child whom I removed by the Cæsarean operation from a woman who had cancer of the uterus. The child was born perfectly healthy, though the uterine cancer was going on around the very situation in which the child was developed. You do not find that in syphilis. If you have syphilis developed in the body, there will be something in the growth of the offspring indicating that the poison is there present. I must confess that the whole course of the argument has tended rather to confirm me in the view that originally cancer is a local affair, in the same sense that any peculiarity that we have in the body is local. It may be determined by some primary conditions of growth, but of that we understand no more than we understand the reason why bones are developed in certain forms, and why muscles are developed in certain forms. It is impossible to go into it. But there is a something in the tissue itself—I believe in the whole range of the tissues—it may be throughout the bones, or it may be throughout connective tissues, or it may be throughout any of the parts in which we have disease tending to develope primarily. If you have a cancerous mother you have cancer, not developed in the breast where it existed in the mother, but you may have it in any other part of the tissues in which a similar structure is present. A parent has a fatty tumour of the shoulder, and the offspring may have a fatty tumour in the arm or leg. But there is nothing in those persons that would necessitate the formation of cancer in some part or another. Suppose where there was an original tendency to cancer the breast was removed before the cancer was developed, I believe there is no special reason why cancer should develope at all. You do not know of the early existence of cancer in the uterus or the breast, because long before the persons themselves are aware of it the cancer has advanced, and disseminates itself throughout a wide range.

AT THE MEDICAL SOCIETY OF LONDON,

ON MARCH 23RD, 1874,

ICTOR DE MERIC, Esq., F.R.C.S., President, in the Chair,

Dr. **COCKLE** then related a case he had attended with Mr. Blackstone, of

CARBUNCLE OF THE LIP, FATAL FROM PYÆMIA.

Mr. C., æt. 38, well-formed, and capable of sustained exertion, laboured under a weak circulation, and unusual coldness of the surface, complexion of an unhealthy sallow tint. Eight years ago he had a severe attack of hæmoptysis, followed by signs of serious disease of the upper portion of the right lung. From this condition. however, he recovered, and about four years ago what seemed to be an ordinary boil appeared at the back of the neck, and this remained an open sore for some weeks in spite of treatment. Both before and after this last affection he complained of giddiness and numbness of the lower extremities, probably caused by weakness of the circulation, as he was invariably relieved by the liberal use of stimulants. On the 16th of February last a pustule, slightly discharging, was observed upon the left upper lip, below the moustache; it was unattended with pain; there was merely a sense of discomfort from the swelling. He had been overworking himself, but his appetite was fairly good, and there was little, if any constitutional disturbance. On the 17th the lip remained in the same state, with a slight increase in the discharge. 19th.—Pain in chest, side, and back; apparently muscular. 20th.—The patient was delirious; temperature, 104°; pulse, 120; swelling of lip greatly increased, and also a hard white swelling extended up to the left eye; upper and lower eyelids closed; a second pustule now formed above and near the first; the swelling invaded the opposite cheek, and the features were no longer recognisable; pains in the chest ceased, and death took place on the 22nd. No albumen nor sugar was detected. For special reasons no post-mortem examination could be asked. It may be a matter of question whether death took place from the extension of the inflammation to the cerebral sinuses, or from blood infection, or from a combination of both. As against the former view headache and exophthalmia were wanting, while in favour of pyæmia there existed shiverings, followed by perspirations, semi-icteric tint of complexion, intense pain in chest, side, and back, marked elevation of temperature, rapid failure of circulation, with sudden and fatal prostration. The peculiar odour of the breath often present in pyæmia, was not distinctly marked, possibly masked by the condition of the lip. Although such cases may have many constitutional symptoms in common with malignant pustule, and thereby at times confuse the diagnosis, they seem, on the authority of the best observers, more particularly Guipon and Reverdin, to be sharply demarcated by the local presence of some amount of true purulent formation; this clearly recognised at once removes the case from the category of malignant pustule.

Dr. **FAYRER** had seen many cases of carbuncle, and had recorded one or two very similar to that related by Dr. Cockle, but whether the lip or other part of the face, the nape of the neck, the shoulder, or back, they are essentially the same disease, significant of a broken-down constitution, and a depraved condition of the blood-elaborating apparatus. Though of great local importance, they are eminenly significant of constitutional disorder, and in India at least, generally accompanied by sugar in the urine (diabetes). Whether large or small, their pathology is the same; they are the expression of a general state, whether it be of broken-down constitution accompanied by diabetes or other evidence thereof, or whether an ordinary boil, which is the faintest expression of something more than that of a mere local origin. The local mischief in both frequently, if not always, begins with the death of a small portion of areolar tissue—from capillary embolism it may be, and around this suppuration is set up for the purpose of throwing off the dead tissue. The same process, or something like it, takes place in carbuncle, but here the death is prone to spread, and in those cases where sugar is present, carbuncle is very frequently, though not always, fatal; where it is absent or not excessive, and the general health otherwise good, recovery even from large carbuncle is not infrequent. Death, especially in cases referred to as carbuncle of the face, occurred from pyæmia, ichorhæmia, or taxæmia—whatever you like to call it—from infection of the blood, at any rate, though in some cases it was due to other causes, as from exhaustion from the carbuncle, or other concurrent disease. But the death that results from this so-called pyæmia does not always imply a collection of abscesses, either visceral or subcutaneous; it is rather due to the presence of a poison which frequently kills before there has been time for suppuration, and which produces necrosis of patches of the lungs, liver, and other viscera, or exudation of puriform lymph into the cavities. If in these cases death is not early, suppuration will sooner or later occur around these portions of the dead tissue for the purpose of getting rid of them. Manifestly such cases must be fatal—no doubt some so-called lower abscesses—and it is fortunate for him in whom the disease manifests itself in the areolar tissue *outside* instead of in the viscera within the cavities. But death also frequently occurs from rapid obstruction of the pulmonary circulation by the formation of firm adherent fibrinous coagula in the right side of the heart or in some part of the pulmonic circulation, this dangerous condition being likely to occur in the blood of persons who have been the subjects of functional if not structural derangement of the liver and especially in malarious climates.

Dr. **COCKLE**, in reply, said the vast experience of Dr. Fayrer showed not only how frequently causes of carbuncle occur in tropical climates, but also how at times pyæmia results. But in the true carbuncular class we ordinarily find that the mischief is at first mostly subcutaneous, and the sloughing parts crop up as it were from below; but in the case recorded the pustule appeared to be almost the initial phenomenon; the hardness and swelling were, if not actually successive, at least simultaneous. Again we must not forget the sudden increase after two or three days of the swelling of the lip, coincident with the supervention of pyæmial phenomena. Another important fact to be borne in mind is, that a few years since English and German surgeons, and, later still, physicians well conversant with genuine carbuncle, regarded cases analogous with that we have recorded as malignant pustule. In this point of pathology they were, however, probably in error, inasmuch as the observation of the French pathologists most experienced in the history of malignant pustule most unhesitatingly affirm that the local presence of pus is exclusive of the latter affection.

ABOUT BOOKS.

The Specific Action of Drugs on the Healthy System: an Index to their Therapeutical Value. By ALEXANDER G. BURNESS, M.B., and F. J. MAVOR, M.R.C.V.S. London: Baillière, Tindall, and Cox.

THE work before us contains a series of experiments and observations having for their object the ascertaining of the true therapeutical value of certain drugs, and this result is arrived at by judging of the physiological effect of the remedy used in the healthy system, consequently, we have the different drugs arranged into substances which are useful in the treatment of derangements of the mucous membranes and skin, those which act on the vascular system, on the cerebro-spinal system, &c. Our authors hold that—

> "In each disease we recognise some certain primary functional derangement of certain parts or tracts brought about by some special cause, and in many cases secondary effects arising from this primary functional derangement; for example, in gout some cause primarily induces functional derangement of some portion of the nutritive system by which uric acid is produced in excess, and as a secondary result this uric acid combines with soda and becomes deposited within the joints, and a fundamental cure can only be effected by removing the cause and restoring the deranged function."

The profuse sweating observed in malarial fevers, as, for example, in ague, our authors look on as salutary in preventing "palsy of the heart and brain," the sweating carrying off the excess of heat and lessening the oxidation of the tissues.

Writing on the action of the concentrated solutions of various salts, such as phosphate of soda, nitrate of potash, &c., it is believed, they say, that these remedies only act as purgatives when introduced into the alimentary canal in a concentrated form, for when given largely diluted their action is chiefly confined to the kidneys, and in some cases to the skin. Sulphuretted hydrogen neither undergoes endosmose nor exosmose with the serum of the blood, and the efficacy of opium is due, we are informed, to its power of putting a stop to the phenomena of endosmose.

At page 13 we find the following :—

> "*Belladonna* is a most efficacious remedy in nocturnal incontinence, erysipelas, and the delirium of fevers.
>
> *Digitalis.*—This drug's specific influence in strengthening a weak heart and correcting its irregular action is at the present day admitted by all.
>
> *Ipecacuanha* is used in many forms of vomiting, dyspepsia, dysentery, and diarrhœa, also in asthma.
>
> *Nux Vomica* improves the appetite, promotes digestion, and relieves constipation; also useful in chorea and epilepsy.
>
> *Bichloride of Mercury* in dysentery, acute and chronic.
>
> *Iodine and Iodides* in various chronic affections of the respiratory mucous membrane.
>
> *Turpentine*, by its topical action on the mucous membranes of the urinary tract is useful in suppression of urine and hæmaturia; also useful in the hæmorrhagic diathesis."

We cannot agree with all that is stated in the preceding extract—for instance, ipecacuanha in some people gives rise to well-marked spasmodic asthma, and, partly on account of its action, has been given on the Continent in cases of hæmoptysis with benefit, not only to control the hæmorrhage, but also to assist in expelling any blood that might be left in the pulmonary or bronchial structures, and give rise, according to Niemeyer's theory, to caseous degeneration.

Cases of internal hæmorrhage, our authors believe, may be successfully treated by the subcutaneous injection of ergotine. We have also a valuable practicable hint with regard to the hypodermic injection of morphia (page 23), viz., that the sickness and vomiting which sometimes occurs after morphia has been injected may be prevented if a small portion, 1-60th of a grain of atropine be given at the same time :

> "We would remark that the readiest antidote to strychnine is the hypodermic injection of morphia, and *vice versâ;* for, in an experiment on a dog, ½ grain of acetate of morphia was given, and, two hours after, when the full physiological effects of the drug were developed, 1-16th of a grain of strychnine was given, and in forty minutes the dog had quite recovered."

Two other examples of the antidotal power of morphia are given, the subjects being this time horses.

Our authors then proceed to briefly describe the drugs and substances used in medicine, giving their "specific action" and their therapeutical use, with dose, &c., whilst at the end of the volume we have a few selected and interesting cases appended, showing what the authors mean by "specific treatment."

In conclusion we have been much pleased by the perusal of the work before us, and have no doubt it will have a ready sale. Some portions of the work might have been a little fuller, but as a second edition will probably be called for, and that we hope before long, this can then be amended.

Bulletins de la Société Anatomique de Paris. Paris : Adrie Delahaye.

THE reviewer often finds himself in a difficulty, either from poverty of material or from superabundance of it. In the one case he has little to write about, and his chief difficulty may be to find words to make as much of that little as possible; while in the other he is compelled by the small space at his disposal to condense so much as to do very insufficient justice indeed to the work under review. A valuable paper, it may be, has to be passed by with but a slight reference, while another, almost as instructive, must remain unnoticed. In reviewing the *Bulletins de la Société Anatomique de Paris* for the year 1873, we find ourselves in this position. To do justice to the great mass of valuable information contained in these *Bulletins* would require greatly more space than is at our command. Under the able presidency of M. Charcot, last year's proceedings of the Anatomical Society of Paris, of which these *Bulletins* are the reports, are peculiarly rich in cases interesting in a clinical as well as a pathological point of view. A noteworthy point is the care with which post-mortem examinations are made in every case, and the frequent resort made to chemical and microscopical examinations of the tissues and excretions. Without these, indeed, we can arrive at no trustworthy conclusions, nor can any practice of medicine be scientific that is not ruled and guided by their indications. It must be remarked, however, that our French brethren possess greater facilities in making post-mortem examinations in their hospitals than we do. Our efforts in this direction are often frustrated by the friends of the deceased withholding their assent to any examination being made, and if one be surreptitiously attempted, it is often of necessity so incomplete as to render it difficult to arrive at a perfectly reliable diagnosis. But while giving all praise to the French for their work, we cannot avoid noticing how little they appreciate the work done by their German and English neighbours. They seem too much inclined to take all possible credit to themselves—often too at their neighbours' expense—and to depreciate, or at least to display little acquaintance with, the scientific work of others in the same field as themselves. Examples of this are to be met with in the present papers.

In giving a running commentary and synopsis of these reports, we shall briefly notice some papers and refer to others, according as they seem valuable or instructive, while anything we believe to be particularly interesting we shall give in fuller detail.

Premature Labour at 6½ months. By M. Budin.—In this case there was hæmorrhage from membranes at a distance from the placenta. Child lived upwards of eight hours, but lungs sank in water. Hæmorrhage of membranes one of the most frequent causes of abortion at the commencement of pregnancy, but very rare at the 6th or 7th month. Its common seat also is near the placenta.

Hypertrophy of Prostate. By M. Curtis.—This is generally attended with large urethral lacunæ on each side of the *veru montanum*, which are often the cause of false passages being formed in the prostate in catheterization. He thinks that, on this account, catheters with bulbous ends are preferable to those with pointed ones.

Prostatic Abscess. By M. Curtis.—Case of stricture in which internal urethrotomy was practised. Abscess formed in the prostate, which, instead of bursting into the urethra or rectum, made its way into the perinæum, and thence behind the symphysis pubis into the abdominal wall, lying between the fascia transversalis and the transversalis muscle. Kidneys were healthy.

Dissection of Encephalon of a Criminal. By Dr. Hamy.—Weight of encephalon about 2¾ lbs., cerebellum, 1⅓ lb.; ratio of cerebellum to cerebrum, 1 to 2¼. The normal weight of encephalon is about 3 lbs., and the normal ratio is 1 to 8½. The frontal and first parietal convolutions were thick and simple, and the first connecting convolution (*pli de passage*), was absent in the left, and very slightly developed in the right hemisphere. This fold is absent in the majority of chimpanzees that have been dissected. Precisely in those convolutions which are most marked in man is there the greatest arrest of development.

Rare Form of Sub-pubic Dislocation. By M. Lemaistre.—In this case the capsular ligament was ruptured, not on the inside, as it usually is, but in front. M. Verneuil endeavoured to reduce the dislocation by rotating the thigh inwards, but found it impossible to do so, though he employed much force. He then pulled the thigh downwards and rotated it outwards, when the head of the bone returned easily into its place. On examining the parts after death it was seen that the easiest method of reduction was rotation of the thigh outwards, and then flexion.

Congenital Umbilical Hernia. By M. Barie.—This occurred in an infant one day old, and of a wan appearance. At the umbilicus was a tumour of the size of a small orange, soft, elastic, and reducible. In its interior was a black crust, from the centre of which emerged the sphacelated remains of the umbilical cord. The child died on the twelfth day. At the autopsy it was found that the hernia was formed exclusively of a piece of one of the three large portions into which the liver was divided, and was covered by peritoneum and the *débris* of the amnion.

Syphilis of the Liver and Kidney. By M. Lacombe.—Death from uræmia, attended with lowering of temperature. In the same number of *Bulletins* are several interesting papers on uræmia by Bourneville and others, in which lowering of temperature towards the last is maintained to be the rule.

Contusion of Head. By M. Cauchois.—There was no external wound or fracture of cranial bones; death by purulent infection at end of three weeks. Autopsy showed hæmorrhage into and softening of corpora geniculata, "probably the result of *contre coup*."

A somewhat similar case is recorded further on by Professor Verneuil, in which purulent infection followed a subcoracoid luxation without any external wound.

The Bones in Syphilis and Rachitis. By M. Parrot.—In rachitis the spongy tissue is abundant in the ends of the bones; the interlamellar medullization also is excentric, while in syphilis it is concentric. In syphilis the extremity of the diaphysis presents a yellow zone, and the bones are less developed than in children of the same age attacked by rachitis. He regards the zone as characteristic, and to express that it is due to calcification of cartilage, he has called it chondro-calcarean.

In the May number he treats the same subject more exhaustively. The following is an abstract of his paper: Rachitis is characterised by three things in its period of development—decalcification, formation of spongy tissue, and medullization.

In hereditary syphilis (in children from one day to six weeks old) we note an exuberance in the calcification at the extremities of the long bones, and we observe a chondro-calcarean zone 1-25th to 1-12th of an inch in thickness, as also a gelatinous degeneration of the preformed tissues affecting at once the cartilaginous and spongy tissues. The bones are denser and more difficult to cut than in the normal state.

2nd. period (six weeks to several months).—The bones preserve the same characters, and we also observe a medullization and decalcification affecting the primary bone.

RACHITIS.	SYPHILIS.
Spongy tissue; peripheral spongy layers, which cause only a slight increase in diameter of bones affected.	No spongy tissue, but instead, osteophytic osseous layers. The diameter of bones considerably increased.
Medullization and decalcification considerable.	Slight.
Never any gelatinous degeneration.	Gelatinous degeration sometimes leading to separation of epiphyses.

3rd. period.—It is now more difficult to establish a distinction. Some of the lesious disappear, while those which relate syphilis to rachitis are exaggerated.

RACHITIS.	SYPHILIS.
No osteophytic layers; increase of diameter by spongy tissue only.	Osteophytic layers and medullary spaces between them. Diameter increased by spongy tissue and osteophytic layers.

Of course, when rachitis sets in in bones already affected by syphilis, these distinctions will be obliterated, and a morbid transformation will occur.

M. Ledentu gives the following *statistics in operations for strangulated hernia*:—In 1,029 operations with opening of sac, about 50 per cent. of deaths; in 87, without opening of sac, 14 deaths per cent.; in 61 cases, with limited opening of sac, mortality 40 per cent.

Septicæmia induced by surgical operations, according to Dr. Pozzi, often causes fatty degeneration of liver and kidney, thus indicating a point of resemblance between it and other poisonings, such as by phosphorus and alcohol. The fatty deposit in the kidney, according to him, is not necessarily attended with albumen in the urine.

M. Malassez contributes two interesting papers on *the relative number of white corpuscles to red* in various diseases. His experiments lead him to believe that the white corpuscles are increased to a very slight extent in erysipelas, unless it be complicated with hypertrophied lymphatic glands. He has ascertained the relative number of the corpuscles before and after amputations and child-birth, and in cases of abscess and empyema before and after operative interference, and he finds that a leucæmia appears when pus is produced, diminishes and disappears when it is evacuated.

Thus, after parturition, as after amputation, he finds that the number of the white corpuscles increases rapidly in a few hours, and that if no accident occurs, their number returns by degrees to the normal standard; while, if an abscess supervenes, or purulent infection, that the number of the white globules remains elevated, and may even undergo an extraordinary increase.

In a paper read before the Society, Professor Goubaud urges *a change in the nomenclature of human anatomy* in reference to the extremities, so as to facilitate the study of comparative anatomy and palæontology. He proposes that the hand should be placed in pronation; that the bones of the carpus in each row should only bear numeric names, proceeding from without inwards; that the fingers also should be numbered from without inwards; and that for the foot the bones should be classified in the same order.

Dr. Joffroy contributes an instructive paper on *Hypertrophic Spinal Pachymeningitis of Spontaneous Origin*, in which the pathological changes in the cord and membranes are discussed with much ability. We can do no more than refer the reader to it.

Anæsthesia Lepra. By M. Renault.—This became tuberculous, and, was attended with excessive albuminuria, depending upon amyloid degeneration of kidneys. In this case complete anæsthesia of the great toe of the right foot was the first sign of the appearance of the disease.

Embolism of Left Femoral Artery. By M. Hervey.—It occurred in a patient with pneumonia. Came on suddenly, with the feeling, as it were, of a sharp blow or painful shock in the affected limb. The post-mortem showed calcareous degeneration of the aortic valves, atheroma of the aorta, and a large dense fibrinous clot in left ventricle extending into aorta.

Cancer of Œsophagus. By MM. Andral and Duret.—This was accompanied by a pulmonary cavity of a gangrenous nature. Some doubt as to whether this last was due to a propagation of the tumour, or wasmerely a coincidence. The stroma in both was identical, but none of the cancer elements could be discovered in the lung cavity, nor was there any communication between it and the œsophagus. Various pulmonary complications, however, are frequently found in connection with stricture of the œsophagus, and seem to be the result of inanition.

Dissecting Aneurism. Case of Dr. Besnier's.—Patient was 63 years of age, very stout. After returning home from a long walk felt a sudden giddiness, which was followed by successive paralysis of all the limbs, first the right arm, then the right leg, &c. The patient died suddenly six hours after commencement of attack. About a pint and a half of blood found in left pleura; pericardium also filled with blood. Heart enlarged, soft, and yellowish in colour, walls greatly thinned and cavities dilated, and a straight fissure in wall of right ventricle; insufficiency of aortic valves; aorta free from atheromatous or fatty degeneration, but at the arch there existed a separation of the arterial tunics, giving rise to a dissecting aneurism, which extended along the aorta and into its different branches. The succession of events was probably as follows: Rupture of aortic coat, giving rise to a dissecting aneurism; opening of this last into left pleura, and in consequence, difficulty in pulmonary circulation; and finally, rupture of right ventricle, affected for a long time with fatty degeneration and dilatation, and sudden death.

A number of cases reported by MM. Pasturband and Petit, in which *periphlebitis and inguinal phlebitis* followed digital compression in amputation of the lower limb.

Death in Cardiac Affections. Dr. Lancereaux.—The most ordinary termination is *slow death*, due to the increasing difficulty in the circulation, and to the organic lesions that this induces. A less frequent termination he calls *rapid death*. This is caused by some sudden impediment, more or less complete, to the intracardial circulation, such as a displacement of fibrinous concretions in the heart, or rupture of the valves; death ensues in from ten to fifteen minutes. A third mode of ending is *sudden death*, which is observed in aortic insufficiency, myocarditis, and general cardiac dilatation. The lesion here is either an organic change or a functional disturbance of the nervous system of the heart.

Photographic Clinique of the British Hospital for Diseases of the Skin.

We feel extremely pleased with the coloured photographic plates of skin diseases issued under the immediate editorship of Mr. Balmanno Squire. They prove how near Art may imitate Nature, and illustrate most elaborately the diseases which they are intended to typify. The accompanying letterpress is pithy, comprehensive, and is sure to be extensively studied.

INDEPENDENT DEPARTMENT.

REMARKS ON PYÆMIA AND ALLIED AFFECTIONS.

By C. A. Gordon, M.D., C.B.,

Deputy Surgeon-General.

The connection that exists between good hospital construction and successful treatment of sick and wounded, between imperfect construction and insuccess, are subjects well known to medical men in this country and on the Continent, from, and indeed, prior, to, the middle of last century. The relation existing between accumulation of patients and mortality has during the same period been recognised. Towards the latter end of that century some authors declared that hospitals, instead of being institutions of public utility, were productive of more evils than benefits, that their number and size should be reduced, and that their total suppression would contribute to the general welfare. Such was the dread entertained of civil hospitals that people objected to enter them, while the condition of military hospitals was, if possible, still worse. A French writer (*a*) described those of that country as being an unfathomable gulf, the sources of their horrors inexhaustible. For some time the sources of this great mortality were not understood. Not only were beds crowded in wards, but two, and even three patients were placed together in the same bed; medicines and food were deficient, clothing was insufficient, ventilation unattended to, and the rooms imperfectly lighted. The atmosphere of the wards was charged with vitiated emanations, so as to be quite insupportable except to those accustomed to it, while the impossibility of cleanliness, or an observance of the common decencies of life, resulted in abominations, blunted the finer feelings of patients and attendants, and converted these places into sinks of moral and physical filthiness.

Among the first to condemn and endeavour to improve such conditions were army medical officers in France and England. In 1760 Van Sweiten remarked that "the lodging of a number of men in a place wanting in space should be avoided with the greatest care," and adds—"but should it at any time become

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(*a*) Turpin de Crisse, tome ii., p. 84.

necessary, the air there must be renewed as often as possible," "for it is from the want of ventilation that the most dangerous diseases arise, including even those that are contagious."(a) In 1772 Sir John Pringle wrote: "Experience has convinced us that air more than warmth is required, and that the more fresh air we let into hospitals the less danger there will be of breeding typhus." He adds to his remarks an observation with reference to the substitution of tents for permanent hospitals. In 1786 Lavoisier gave for the first time a scientific formula for the amount of air consumed by a man, and consequently, which it was necessary should be replaced by ventilation; at the same time a modification of the plan of ventilation introduced by Sutton for ships was recommended for military hospitals by Monro; but not until fifty years afterwards was anything really effectual done to improve the sanitary conditions of those establishments.

In 1812 Drs. Bell and Hennen, struck by the mortality among their wounded accommodated in hospitals and the large buildings occupied during the war in Spain, had recourse to tents, and with the most happy results. In 1814 the wounded in Paris were accommodated in the unfinished abattoirs and other buildings, with the result that among the 6,000 patients thus provided for, the mortality was less than among such as were accommodated in the permanent hospitals. During the Crimean war tents were extensively employed, under the instructions of M. Michel Levy, with the result that hospital gangrene, which prevailed extensively in the hospitals of Turkey, rarely appeared among the wounded being treated under canvas. During the Indian mutiny a large number of wounded were treated in tents, and in them the affections now being considered were almost absent, while among such as were treated in permanent buildings they prevailed to a great extent. In the American War of Secession, during the first two years of its continuance, 100,000 wounded and operés were treated in tents, of whom less than 200 suffered from hospital gangrene, while pyæmia and erysipelas were almost unknown among them. According to M. Stromeyer, out of 1,092 wounded at the battle of Langansalza treated in huts, cholera and hospital gangrene were unknown, although both these affections prevailed in the surrounding town. In 1866, an epidemic of hospital gangrene having occurred in the Charité of Berlin, those affected were removed to tents, and in the same year both wounded and patients suffering from typhus fever at Frankfort-on-the-Maine were similarly treated with very favourable results. During the late war in France the employment of huts and tents was adopted whenever practicable, the experience gained indicating a descending scale of mortality, according to the kind of construction occupied. First and most fatal were the larger and more pretentious buildings, whether originally erected to serve the purpose of an hospital or improvised as such, including churches, public offices and buildings, theatres, ball-rooms, and so on; after them came the smaller permanent buildings, including private houses; then huts, and lastly tents, which were the most healthy of all constructions employed. Indeed, one of the important lessons to be learnt from the experience of the siege was the inadvisableness of treating wounded in large buildings at all, and the propriety of only using extemporised constructions of canvas or wood where it is possible to do so, having consideration to the unavoidable difficulties under such circumstances of providing either in sufficiently large amount. The experience of the siege also confirmed several other points that had been previously indicated. Thus, the circumstance had been mentioned that instead of upper storeys of hospitals being those in which wounded recover most favourably, it has been found that the mortality rate increases with the number of superimposed storeys.(a) The danger arising from proximity of wards to post-mortem rooms received confirmation in the instance of the Palais de l'Industrie, where that circumstance was acknowledged to be one of the most powerful causes of pyæmia; also in the Ambulance de la Presse, where we learn that often, after the great battles, the dead from the field, and those from wounds, accumulated to the number of sixty and eighty, the bodies being retained during several days for the purpose of being identified.(b)

With reference to the actual nature of the poison which is the ultimate cause of pyæmia, several different views are entertained. In this country, and by some continental writers, this poison is believed to be generated by emanations and foul atmosphere, and to be in its nature organic. Mr. Savory believes that it is formed during the decomposition of animal fluids in connection with the living body, the decomposition being hastened by exposure to air and by the introduction of other matters also in a state of decomposition. He, however, pointed out instances in which wounds continued bathed in putrid fluids retained in cavities without pyæmia being induced, although such fluids introduced into the blood of an animal gave rise to symptoms of blood-poisoning. This he attributes to the dialyzing property of animal membrane, and with regard to the former he considers that so long as granulations are in a healthy condition they exert a similar power, but that as soon as they become diseased or destroyed this power ceases. According to this view I conclude that pyæmia may, under particular conditions, be autogenic, and thus its appearance in individual cases sporadic, in the same way that cholera, small-pox, or other *zymotic* diseases at times present themselves; but that under other conditions a number of persons may at the same time become subjects of the affection, and it spread among those who are subject tothe se conditions. Thus also the sources of the affection exist within the animal system, ready to be called into activity by particular conditions.

M. Verneuil is of opinion that pyæmia and septicæmia have their origin in a specific poison, in which view he is supported by M. Gosselin and by Bergmann. This poison receives from him the name of sepsine. He classes it among the alkalies, and asserts that its sulphate, which he produces in the form of needle-shaped crystals, if dissolved in water and injected into a dog, induces the disease in the animal. M. Klebs, on the other hand, considers the actual cause of these diseases to be a parasitic fungus, the *microsporon septicum;* yet the occurrence of the affection, so often and generally observed in connection with osteomyelite, renders the correctness of either theory uncertain, and perhaps unnecessary; but I refer on this and other points connected with the subject of pyæmia to my work on "The Hygiene and Surgery of the Franco-Prussian War." According to the views of M. Legouest, septicæmia differs from pyæmia, whether considered as a separate form or degree of that affection, and Berard has established that difference, which, however, is denied by Sédillot. Berard considers that septicæmia advances slowly, and in a chronic form, whereas Legouest and other writers observe that its progress is sudden and rapid, destroying life in one or two days, although sometimes protracted over several weeks, and in these admitting of recovery. In the acute form it is seldom possible to distinguish between it and pyæmia. The attack takes place by shivering, followed by fever, but without well-marked intermission. The fever persists, followed by delirium, stupor, and at times convulsive contractions of the muscles, the duration of the attack rarely exceeding four or five days, and often less than twenty-four hours. As in pyæmia, so in this form, the occurrence of secondary hæmorrhage was a frequently observed symptom—sometimes from a vessel, sometimes *en nappe*, sometimes before other indication of the affection had occurred, sometimes after the disease had advanced considerably. It has been observed that it is not in cases of suppurating wounds that septicæmia appears, as happens in pyæmia, but as succeeding gangrenous inflammation, or after hospital gangrene, in cases of great wounds, especially amputations, the rapidity of the symptoms being in proportion to those affections. Mr. Henry Lee (*a*) describes septicæmia as being a state of general infection of the blood, without necessary blood-clotting, embolism, or multiple abscesses, with fever more continued than in pyæmia. Professor Billroth (*b*) considers it as essentially different from pyæmia, as dependent upon absorption of putrid matter, and as producible in experiments. In it there is, according to him, no metastasis, no rigors; but extensive purulent infiltration around the wound. Carswell thinks that these two affections are not identical, but that in both pus circulates in the blood; Sédillot, that one form of disease may arise from the presence of pus globules in the blood, the other from the products of animal putridity; whereas, according to Virchow, pyæmia is a collective name for several processes essential in their nature—viz., thrombosis, ichorous infection, or septicæmia, and leucocytosis, when there is affection of the lymphatic glands. According to Braidwood, pyæmia is not like typhus fever, essentially traceable to overcrowding and defective ventilation, but may attack patients in small houses as well as in large, this opinion being in accord with that expressed by the learned President of the Clinical Society. According to Dr. Richardson, the poisonons agent of pyæmia consists of an alkaloid, the product of decomposition of albumenoid substances; while, according to some experiments performed upon rabbits by M. Devain, so virulent is this influence that the blood of one of these animals already infected propagates the disease—exerts its effects even when diluted to a *trillionth* degree, or when inoculated through several animals.

(a) Description Abrigé des Maladies qui règnent le plus communement dans les Armées. Paris, 1760. See also "Sanitary Associations during the Franco-Prussian War," vol. i.

(a) Statistique Médicale des Hôpitaux de Paris. 1867-8.

(b) Les Ambulances de la Presse. Paris, 1873. P. 300.

Besides overcrowding, insufficient cleanliness and ventilation, and the conditions already related, there are other circumstances which contribute more or less to the occurrence of the affection—thus, the complicated method of dressing wounds followed in Paris, whereby the discharges are prevented from having free exit, an abnormal temperature of the part kept up, and which is unfavourably compared by M. Schatz with the more simple and hygienic method followed in England and America. The use of charpie is attended by risk of that material absorbing the miasms of the ward, and is itself often prepared by convalescents in wards where infectious cases are accommodated, while *lint* and cold water and other lotions have no such disadvantages; and cataplasms being liable to become rancid, are often thus transformed into sources of injury. Another cause of this and other *accidents* following severe wounds and operations is insufficient or unsuitable diet, a circumstance observed in France in 1814, at which time, under the system of low diet then observed in their hospitals, one in four of all cases of operation ended fatally, whereas in Russia, where more nourishing food was given, the deaths were one in seven to thirteen. The *moral* of the patient exerts also a powerful effect, and M. Gosselin pays especial attention to this circumstance in preparing a patient for the performance of a severe operation. The prolonged sojourn of a patient in a surgical ward or hospital increases his liability to the affection by exposing him to the actual causes of it, and lowering his own vital condition. A cachectic condition of body on the part of a patient predisposes him to pyæmia and other affections, as does also a condition of alcoholism; and it is usually considered that inhabitants of towns support wounds or operations in a less degree than persons from the country. Constant and long-continued occupation of a room or building by surgical cases no doubt increases the liability of patients to the affection. Another cause of the affection, and it may be added, of others connected with hospitals, is the insufficiency of surgeons and properly trained attendants in times of war, leading to delay in the performance of needful operations, and to inadequate cleanliness and attention to patients and establishments afterwards. Another cause to which the prevalence of the affection in Paris was attributable was the loss of blood to which in many instances the wounded were subject in the field, as also in transit to hospital, and while there before they could receive needed attention. MM. Sedillon and Salleron consider attempts at union by the first intention to constitute a cause of the affection, but the practice of British surgeons hardly supports their views in this respect.

In the earlier period of the siege of Paris small-pox prevailed extensively among the national guards and population of the city. When pyæmia first made its appearance and began to extend its ravages, explanation of the circumstance was eagerly sought for in the various abnormal conditions to which the capital of France was then subjected. Among others, it was by some men of eminence believed to be in a measure the result of the same *pyogenic* influence as that to which the small-pox was due, an opinion which gradually gave way as the winter of 1870-1 advanced, and the circumstance manifested itself, that although the force of the epidemic of small-pox seemed to expend itself, the prevalence of pyæmia extended, evi-

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(*a*) Practical Pathology. (*b*) Pyæmia, by Braidwood.

dently from an intensification of the conditions upon which its occurrence really depended. That this pyogenic influence may, however, exert a very considerable influence would seem to derive support from the circumstance mentioned by Dr. Hicks, that of a number of cases of parturient women seized with puerperal disease, many of them had been exposed to animal poisons of various kinds, as scarlet fever, erysipelas, diphtheria, typhus, and so on.

M. Démarquay, in the pamphlet already referred to, gives some valuable particulars in regard to mortality after operations, which may be here reproduced for comparison with similar details by English surgeons in reference to pyæmia. M. Salleron gives statistics of 639 cases of amputation, either in the continuity of long bones or through articulations, the general results being that recovery took place in 294 and death in 345; of the latter, death arose from diverse accidents in 27, from gangrenous emphysema in 65, from hospital gangrene 25, and from pyæmia in 228; of 490 cases of primary amputation there were 274 deaths and 216 recoveries; of 146 cases of disarticulation 69 deaths and 77 recoveries: in other words, less than half the cases recovered where the medullary canal was opened, and a little over the half where it was not opened. According to M. Jules Roux, of Toulon, recoveries are much more frequent after primary amputations than after secondary, particularly if the medullary canal has become inflamed. Thus, of 419 primary amputations recorded by him, death took place in 198 and recovery in 221; while of 220 secondary amputations there were 147 deaths and only 73 recoveries; and by dividing the cases of amputation still further, the results obtained are, that of 256 primary operations in the continuity, there were 183 recoveries and 73 deaths, while of 137 consecutive amputations, 33 recovered and 104 died. Of 66 primary disarticulations, 38 recovered and 28 died; and of 83 consecutive, there occurred 40 recoveries and 43 deaths. Of 490 cases of amputation through the continuity of the limb, 192 deaths by pyæmia took place; while of 149 in the contiguity, that is, through a joint, there were only 32 deaths. M. Salleron gives some statistics of amputation of the thigh, according to which we find that of 84 cases of primary operation there occurred 53 deaths and 31 recoveries, while of 46 secondary 44 died and 2 recovered. Of 97 amputations in the thigh, 65 deaths took place from pyæmia, this result being readily explained by considering the occurrence of osteomyelite as the cause of the affection. Elsewhere we find that, whereas prior to 1837 the rate of mortality after amputation of the thigh, deduced from statistics in England, France, Germany and America, was 2 in 5 cases, or 40 per cent., the average of all amputations taken collectively being 23·7 per cent., the latest statistics of hospital mortality in England gives an average mortality of all equal to 41 per cent., showing, it is to be feared, that notwithstanding all our *improvements* in sanitation, the risks of death after operation are not now much less than they were many years ago; in fact, there is reason to doubt if the recoveries are more numerous now than they were a hundred years ago.

According to tables furnished by M. Salleron of 10 cases of amputation or resection following wounds of important bones, 8 died and 2 recovered, the operations being performed between the fifty-seventh and ninety-ninth day—that is, during the phase of chronic osteo-myelite. Of 6 similar operations performed in the upper part of the injured bone, or at a distance from the fracture, 3 recovered. In another table he gives particulars of 20 cases in whch conservation of the limb having been attempted and failed, secondary operations were required; in 11 of them, including 2 of the hip, disarticulation was performed at periods from the ninety-seventh to the two hundred and sixth day, and with success, proving thus the importance of avoiding the medullary canal in consecutive amputations. He further gives particulars of 12 cases of wounds followed by osteo-myelite, 7 ending in death by pyæmia.

Dr. Fayrer states, that of 15 deaths following operation, 9 occurred from osteo-myelite; also that he does not hesitate to perform a second operation when that serious complication presents itself. One case related by him is noteworthy—namely, that of a lesion of the frontal bone, followed by fatal pyæmia, post-mortem examination discovering osteo-myelite of that bone; and M. Démarquay observed during the Commune that wounds of the head, apparently slight, were in some instances followed by death from pyæmia, and that in all such osteo-myelite of the diploe was subsequently found to exist. A similar circumstance had previously been noticed by Velpeau. Billroth observed that if inflammation of the medullary canal proceeds beyond the first stage, becomes extensive, and ends in suppuration, the suppuration may become ichorous and give rise to pyæmia; and that if in addition there exists extensive osteo-myelite and purulent periostitis, the death of the bone is certain. He states that it is by no means rare to find osteo-myelite complicated with osteo-phlebitis, giving rise to thrombus, leading to the formation of metastatic abscesses; and that another complication of osteo-myelite is the formation of purulent deposits in cartilages of epiphyses in persons under twenty-four years of age. M. Démarquay, quoting from the work by Dr. Braidwood, observes that of 20 cases of pyæmia mentioned by the latter, 13 were due to osseous lesions requiring amputation or excision of joints, and adds that all the other authors quoted by him indicated pyæmia as a complication of osteo-myelite, although without alluding to the connection between the two affections. Dr. Marmy formally denies such connection, and considers osteo-myelite nothing more than necrosis, he being supported in his views by MM. Broca and Chassaignac, the latter of whom declares that he has never seen a single case of traumatic osteo-myelite inducing pyæmia, except when a portion of the bone has become necrosed. Everybody, he says, has seen violent inflammation following an injury end in gangrene, and why should not the same result follow in regard to bone?

M. Démarquay next proceeds to consider the influence of idiopathic osteo-myelite upon pyæmia. On this subject he adopts the statement of M. Chassaignac, that although osseous inflammation is for the most part slow in its progress, yet there are exceptions to this rule, suppuration sometimes taking place in bones with great rapidity, and that suppuration of this nature when it does occur is always injurious, giving rise in its acute form to pyæmia, in its chronic to exhaustion, marasmus, and consumption, and to chronic suppuration of vital organs. M. Démarquay has seen 165 cases of fatal pyæmia consequent upon idiopathic osteo-myelite, and asks, how are we to explain the occurrence of the latter as a cause of the former? For example, a young subject in robust health is seized with severe pain in a limb; the progress of the case speedily indicates it to be one of osteo-myelite, and the patient dies from pyæmia, unless the limb be speedily amputated. In such a case what other cause of pyæmia is there except the local disease?

When this subject was brought to the notice of the Academy of Medicine, MM. Gosselin, Bouley, and Bouillaud were about the only members who took count of the anatomical conditions attending pyæmia, M. Bouley, referring particularly to the affection as observed in the horse, observing that the chances of pyæmia are in proportion to the vascularity of the seat of the seat of injury, and similar conditions are observable in man. M. Gosselin particularly insists upon the influence of osteo-myelite in the production of pyæmia. He observes that the denudation of a bone exposes the vascular canaliculi; that in cases of injury penetrating to the medullary canal the bone itself becomes infiltrated with disorganised and fœtid blood, the cavity being filled with similar matter and dead organic detritus, much of that detritus being formed at the expense of the medulla, and like any other dead matter, demanding to be eliminated. These alterations may be the consequence of local inflammation and other action, but it is difficult to believe that they are not in some respects due also to the contact of air. M. Démarquay, whose experience of the affection during the siege and rule of the Commune was immense, observes that the greater number of the severely wounded died of purulent infection, and that in them osteo-myelite was the cause of that grave complication. He adds that it had escaped the notice of the majority of practitioners, that it was little looked for during life or investigated after death, and arranges osteo-myelite into the primary and the consecutive forms. Osteo-myelite is said to be inseparable from an injury affecting the medulla. When it is limited in extent and degree recovery takes place; when it implicates the whole canal, it is confounded with traumatic fever.

There is much reason to believe that under conditions such as prevailed during the siege of Paris, and such as must more or less exist during all wars, the extensive scale upon which conservative surgery was attempted to be carried out proved an important cause of pyæmia and allied affections. Thus they were considered to occur more frequently in patients when resection or excision was performed, than among those subjected to amputations. In the former there were necessarily two osseous surfaces left exposed to the causes of the affection instead of one in the latter, and thus doubts were by some surgeons entertained as to how far it was justifiable under the circumstances to persist in operations which thus increased the risks attending them. With regard to the practice of conservative surgery properly so called, experience of the Franco-Prussian war, as indeed of all wars, has shown that it has its risks, although in one set of cases it is upon the whole less fatal than the more "radical" method of amputation—namely, in gunshot fractures of the upper part of the femur. Contrary, however, to what seems to be generally believed, conservation is by no means more successfully practised at the present day than it was during the war in Flanders in 1815, if indeed it be so successfully, as may be seen by comparing recent results with those obtained under the more "heroic" measures of that day. *It* was believed that during the War of the Secession much of the osteo-myelite which then prevailed was due, in a measure, to protracted transport of men severely wounded. This would not, however, hold good in regard to the siege of Paris, neither is it in accord with the views of M. Legouest, as we shall see presently.

The risks of attack by pyæmia must henceforth have an important bearing upon the nature of operations deemed proper to be performed, and upon the question of conservative surgery in hospitals, and especially in war hospitals, the point to be arrived at being whether this risk is most diminished by amputation of wounded limbs, by excision or resection of the seat of injury, or by conservative surgery; also upon the question of the proper time for the performance of operations. According to the statistics given by Mr. Guthrie of amputations during the Peninsular War, out of 291 performed on the field there were only 24 deaths, or 8.2 per cent., while of 550 secondary, 265, or 48 per cent. ended fatally, there being every reason to believe that the great majority of the larger number succumbed from pyæmia. In civil hospitals somewhat similar results take place, but the general conditions of the latter establishments being so different as they are from those of the former, conclusions drawn from the one are only in a degree applicable to the other. Thus, in war hospitals, crowds of severely wounded are suddenly brought in; they have to be accommodated, dressed, and attended to according to their several necessities within a very short time; the attendants are only partially initiated into their duties, and are often present in insufficient number, while in civil hospitals the converse of all these conditions exists, thus giving to the comparatively few patients in them advantages in many ways that are absolutely unattainable in hospitals connected with armies actively engaged. During the siege of Paris the fact soon became too evident that operations of all kinds, if implicating the bone, were almost invariably followed by osteo-myelite and pyæmia, if performed subsequently to the occurrence of suppuration in the wound which demanded them, a circumstance which unhappily could not always be avoided, considering the scale upon which casualties in battle occurred.

M. Démarquay makes allusion to the occurrence of pyæmia in connection with conservative surgery. He alludes to fatal osteo-myelite occurring in cases of lesion of important bones where hopes of success at first existed. He remarks that this serious complication takes place not only in cities, but also in the country, where he saw a young man with comminuted fracture of the leg, complicated with hæmorrhage and osteo-myelite, succumb on the twenty-fifth day after the accident; and that with phlebitis it is one of the two most frequent causes of pyæmia, but not of septicæmia, with which it is often combined. He believes that pyæmia may arise, no matter what is the nature of the wound, but that when it follows an injury seemingly trifling in importance, it will be found that an important vein has been implicated, or a bone been splintered in some degree; and he has often pointed out that although such cases end fatally, those in the same ward, but in whom the soft parts are alone implicated, progress normally to recovery. In the Ambulance of the Ponts-et-Chaussées, totowards the end of the siege, although several patients suffered from hospital gangrene, none succumbed from pyæmia except such as suffered from lesions of the bones; and he observes that injuries of any of the bones of the skeleton are capable of producing this result, the explanation given by M. Démarquay being the existence of free communication between all of them and the veins.

Nor is it necessary for the production of pyæmia that a bone should be penetrated by a bullet or otherwise. M. Démarquay has seen cases in which osteo-myelite followed slight wounds where a bullet had simply passed around a bone. He has observed that, as in idiopathic osteo-myelite, so in that after an injury the affected bone acquires an extreme degree of fragility, so much so that the patient is conscious of a feeling that such is the case, and that fracture sometimes occurs during the act of moving the limb upon a gouttière during the performance of the necessary dressings.

But, it will be asked, how is it that pus enclosed within an osseous canal can pass into the circulation? In order to resolve this question, M. Démarquay performed a series of experiments upon animals, the results being that deteriorated pus introduced artificially into the medullary canal gives rise to osteo-myelite and to pyæmia or septicæmia, according to the state of the fluid introduced; that similar results are obtained by making injections into the veins; and that he considers the poisonous material to be admitted into the general system through the venous openings in the bone itself. According to M. Reynaud, he has seen the veins containing pus in a case of osteo-myelite following amputation, and M. Berard has made the same remark.

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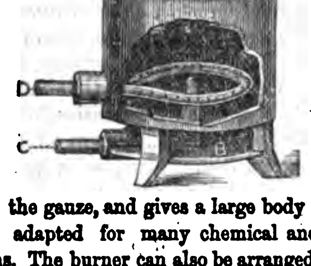

OBITUARY.

ADAMS.—On the 10th April, at Woolwich, Robert Adams, M.D., Surgeon Army Medical Department.

ALLCOCK.—On the 11th of April, C. Allcock, L.R.C.P.Ed., of South Road, Waterloo, Liverpool, aged 34.

ALLIN.—On Feb. 20, at Echuca, Victoria, Australia, J. Wesley Allin, M.R.C.S., of Pembroke, Wales, aged 28.

ARNOLD.—On the 20th of April, at Grove Cottage, Woolston, Southampton, Richard Arnold, M.R.C.S.E., late Surgeon-Major H.M.'s Indian Medical Service, aged 40.

BARKER.—On the 20th of April, at Barrow House, near Bury St. Edmunds, William Searle Barker, Surgeon, aged 60.

BARNES.—On the 15th of April, F. W. Barnes, M.R.C.S.E., of Great Crosby, Lancashire.

BEGG.—On the 8th April, A. H. Begg, M.B., of Edinburgh, aged 32.

BOWER.—On the 2nd of April, M. N. Bower, M.D., Superintendent of the Staffordshire Lunatic Asylum, Stafford, aged 65.

BRYCE.—On the 8th April, Charles Bryce, M.D., of Old Steine, Brighton, aged 70.

CATES.—On the 8th April, John Cates, M.R.C.S.E., of Avenue Road, Clapton, aged 74.

CARSON.—On the 16th of April, at Grove Lodge, Merchiston, Wm. Carson, M.D., Deputy Inspector-General of Hospitals.

CHINERY.—On the 1st of April, at Lymington, Hants, E. Chinery, M.D., aged 58.

CRYAN.—On the 5th of April, at Boyle, co. Roscommon, of bronchitis, Peter Cryan, M.D., aged 75.

DODDS.—On the 12th April, Richard W. Dodds, M.D., third son of Ralph Dodds, Berwick-on-Tweed, aged 25.

FEREDAY.—On the 14th of April, S. D. Fereday, F.R.C.S.E., of Long Leys, Water-Orton, Warwickshire.

HAYWARD.—On the 1st of April, at Lansdowne, Falmouth, Sidney Hayward, M.D., of Overton, Micheldever, aged 83.

HERRICK.—At West-view, Blackrock, Cork, George Herrick, M.D., late of Toronto, Canada West, aged 82.

KEAL.—On the 5th of April, William Tomblin Keal, M.D., of Oakham, aged 82.

KEENLYSIDE.—On the 5th of April, R. H. Keenlyside, M.D., of Vernon House, Surbiton, aged 77.

M'LENNAN.—On the 5th of April, John M'Lennan, M.D., F.R.C.P.L., late Physician-General Bombay Army, of Harley Street, aged 72.

NIND.—On the 5th April, at Torquay, Philip Pitt Nind, M.R.C.S., aged 50.

PEACH.—On the 9th April, Thomas Peach, M.D., of Langley Hall, near Derby, (late Physician to the Derbyshire General Infirmary), aged 89.

PUGHE.—On the 9th April, John Pughe, F.R.C.S.E., of Aberdovey.

TABUTEAU.—On the 29th of April, at his residence, Portarlington, Queen's County, in his 78th year, Augustus Elliott Tabuteau, Esq., J.P., M.D., F.R.C.S.I., deeply and deservedly regretted.

TELFORD.—On the 23rd of April, at his residence, 23 Clarinda Park East, Kingstown, co. Dublin, Thomas Telford, M.D., F.R.C.S.I., eldest surviving son of the late John Telford, of Ballyboughlin, Clara, King's County.

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Multum in parvo.

TRAINED NURSES.

THE supply of trained nurses is at the present time utterly inadequate to the demand. As a consequence of this, except in hospitals, the sick poor can never be provided with the nursing of which they are even more in need than those in more fortunate circumstances. Some time ago, in one of those thoughtful papers that he so well knows how to produce, Mr. Hinton drew a picture of the duties of a nurse, and urged his female readers to adopt nursing as a really noble profession.

Taking considerably lower ground, the Order of St. John has just decided on a plan for promoting the efficient training of nurses for the sick poor. A national association has been set on foot for the purpose similar to that of the Red Cross Society for Aiding the Sick and Wounded in Time of War. The new organisation is to be distinguished by a badge—a white cross—and may be called the White Cross Society. Notwithstanding the objections that the majority of the poor will, we think, entertain to the badge and the dress, we may wish success to this new effort. It has been commenced by the Order of St. John, about which the people are profoundly ignorant, and it is sure to inspire fear lest it be the occasion of some Popish attempt to gain admission to the households of Englishmen. There is a prevailing distrust of sisterhoods and orders, and a dislike of badges and dresses. In some of our hospitals it is quite depressing to see the figures that pass along the wards. They would be unendurable by doctors and students—much more by patients—did not their faces and voices refuse, as a rule, to harmonise with their lugubrious dresses and the clanking of the keys and cross at their waists. Sisterhoods, brotherhoods, and other orders are utterly alien to the English mind, and we fear that whoever adopts a peculiar dress or badge, even in the best of causes, may find it a hindrance.

It would have been wiser to establish a Nightingale College for teaching nursing as a profession, and to let the certificated proficients enter practice in their own way. Some good has already been done by the institutions in existence; but much more remains to be accomplished before the nurse is to be found everywhere as the efficient assistant of the doctor. A good nurse should be a well-trained woman, ready and able to do in the best way all that requires to be done. She should move lightly, but swiftly, detect and remedy what is amiss, and teach the first rules of hygiene by continually practising them. To the poor nurses will never be acceptable or useful until they have thrown off all pretension to superiority—ceased, in fact, to "give themselves airs," the complaint which has made them detested among the middle classes, where the appearance of the best of them is regarded —and no wonder—as an unmitigated nuisance. The tyranny they delight in, the vulgar conceit of their little knowledge, their refusal to do what is not in their place, have often made them so disagreeable, that cook, housemaid, every servant, nay, every member of the family have combined to do without them. No doubt with better education we shall get great improvement; but we strongly fear that a very imperfect idea of the task undertaken is cherished by the new society. To multiply nurses of the slightest training will do little good. To send forth thousands of Miss Nightingales to help the poor in sickness would be indeed to deprive disease of many of its miseries, to second with the skill and loving kindness of a true woman—not the prim services of a formal sisterhood—the ministrations which the doctor has always lavished on the poor. Let us have a profession of nursing, and let all who would help to realise this recognise how honourable a calling it would be, and how worthy of being adequately remunerated by those who could afford to call in the most skilful attendance.

CHRONICLE.

DIETETIC TREATMENT OF DISEASE.

FEW persons have worked more patiently or more scientifically than Professor Parkes, and we therefore always read with care what he has to say. Some points in regard to the influence of foods he has quite made his own; and in a paper lately read at Southampton, one part of which, relating to alcohol, we examine at length in this number, he has related some intensely interesting experiments on diet. He found for example, that a diet of dried meat and bread, without vegetables or fat—such a food as might perhaps be tried on a rapid march—produced in two or three days great dyspepsia, depression of spirits, and an eruption like acne over the face and shoulders. The addition of starches and butter to this food at once relieved these symptoms.

Another important fact brought forward by Professor Parkes is that a non-nitrogenous and non-saline diet greatly lessens the acidity of the urine. This it does not by neutralising the free acids, as alkalies do, but by lessening the formation of acid in the system. Such a diet is easily supported for a few days. In fact, Dr. Parkes says that one soldier did a full day's work on the fifth day of this diet. It is to be observed, however, that the power of the heart is greatly diminished by this diet. In twenty-four hours it beats more feebly, the pulse is smaller and softer, and the sphygmograph shows the up-stroke to be only half the normal height. Here we have, then, a therapeutic power of the very highest importance.

The diet consisted of arrowroot cakes made with butter melted in a water bath, and a little sugar. Dr. Parkes says the men ate the cakes with great relish when buttered, consuming 10 oz. of arrowroot, 6 oz. of sugar, and 2½ oz. of butter in twenty-four hours.

He says, too, a good cook can make these cakes, which are not in the least tough. On trial we find this by no means so easy. Two excellent cooks have failed to satisfy us. They both say water ought to be used also if genuine arrowroot is thus to be employed. We have given them fine Bermuda arrowroot, but what they produce is excessively dry, brittle, and has an underdone taste. With ground rice they succeed better, but that contains some nitrogen. Dr. Parkes would do a service to us, and no doubt our readers, if he would favour us with some more explicit directions for making these cakes.

TREATMENT OF VARICES BY THE LOCAL EMPLOYMENT OF PERCHLORIDE OF IRON.

Dr. Linon, of Verviers, has used perchloride of iron locally with great success during the last three years in the treatment of varices. The strength of the solution is about two and a half drachms to eight ounces of water. Compresses of flannel are steeped in the water, then wrung out, and applied by means of a flannel bandage, which is only to be moderately tightened. This application is to be kept on twenty-four hours, and on removing it the surgeon is much surprised to find that the venous dilatations have almost entirely disappeared. The applications are to be renewed as above during seven or eight days successively, after which time the bandage is to be kept on, without any further wetting, till it gets loose. It is then to be wetted again with the solution, and applied, until the varices have disappeared, which generally takes place after eight days or a fortnight, according to the size of the swelling.

VENOUS INJECTIONS OF CHLORAL.

A little time ago M. Oré, of Bordeaux, had the temerity to inject a solution of chloral into the veins for the purpose of producing anæsthesia. It was so effectual that after the operation the patient could only be roused from his profound sleep by powerful galvanic shocks. The danger of coagulating the blood, and giving rise to embolisms—an event that has occurred already—with other considerations, induced the Paris Surgical Society to regard the new method with the utmost disfavour, and the Academy has since expressed an equal disapproval. Two professors in the University of Ghent, MM. Deneffe and Van Wetter, have nevertheless employed this injection of chloral to produce anæsthesia prior to an operation. The injection was made very slowly, ten grammes of chloral hydrate being used in three times as much water. The effect was sufficient, for the patient could not be roused for nine hours, even by electricity, but at the end of that time he woke up, and, at the time we write, fourteen days after the operation, we have information that he is doing well. We have good authority to state that MM. Van Wetter and Deneffe intend to make further trials, but we hope they will first weigh the general disfavour with which the plan is regarded as one exposing the patient to needless risks.

ANTIDOTE OF RABIES.

Dr. Jitzki has stated to the Imperial Society of Wilna (Russia), that a very savage dog was in the habit of killing vipers (*Coluber berus*). His mouth and neck were covered with wounds inflicted by the vipers. This animal was bitten by a mad dog which had previously bitten cattle and a dog; all perished in a rabid state. The owner of the first-mentioned dog, not wishing to destroy him, determined to watch him, and kill the animal at the first symptom of rabies; but the dog remained quite well.

Dr. Jitzki learned, too, that a woman of the same locality had been bitten by a viper, and some time afterwards by a mad dog, without suffering from hydrophobia, and he suspects there is antagonism between the virus of hydrophobia and of vipers. It is suggested that dogs might be inoculated with the virus of vipers to make them insusceptible to hydrophobia.

NEW PROCESS OF TRACHEOTOMY.

Dr. Saint Germain (*Gazette des Hôpitaux*, No. 14) advises tracheotomy to be performed in the crico-thyroid space by means of an olivary cautery the size of a crow-quill, heated to a dull red heat. He has made experiments on dogs and on the subject. On the subject, when placed on the back, with a pillow below the neck, the left hand holding the larynx, and the operator on the right of the subject, the larynx was held firmly and compressed against the vertebral column.

The cautery was then heated to a dull red heat, and fixed perpendicularly upon the crico-thyroid membrane, after which, through the orifice he introduced Laborde's dilator, and enlarged the solution of continuity until it was possible to introduce a canula of mean size. In dogs thus operated upon there was not a drop of blood lost.

DIFFERENCE OF APPEARANCES IN ETHER AND CHLOROFORM.

Dr. Schiff (*L'Imparziale*, V., No. 6, 1874) says that in the use of chloroform, as also in ether, we notice palsy of the consciousness, of the voluntary muscles, and of respiration, and circulation of the heart and motor muscles. The two first order of phenomena take place invariably with either of these anæsthetics. The third phenomenon, that is, paralysis of respiration, is produced by ether, whilst the circulation and the pressure of blood are still compatible with the prolongation of life. Sometimes the vascular pressure is lessened, at others, again, when the respiration commences to quicken, the pressure augments, as takes place by the accumulation of carbonic acid in the blood; but artificial respiration always finds the blood with a sufficiently high pressure, by means of which the change between the oxygen of the air and the carbonic acid takes place. It is only after the paralysis of respiration that there occurs with ether the paralysis of the circulation, and then the paralysis of the heart, which is, however, never seen in mammifera, because in general death takes place so rapidly after paralysis of the circulation.

Under the action of chloroform, again, respiratory paralysis does not always precede the palsy of circulation; but in many individuals a proportion of this anæsthetic agent, insufficient to cause palsy of respiration, may produce palsy of circulation. In this case, and when the paralysis of circulation is far advanced and has lasted for a certain time, which frequently is less than half a minute, artificial respiration is inefficacious, because on account of the diminished pressure of blood the change of gases cannot take place. Indeed, on making, immediately after the completion of anæsthesia, artificial respiration by means of tracheotomy, and making the canula communicate with a Wolf's bottle containing chloroform through which air passes, before arriving at the aperture in the trachea, it may easily be seen with a manometer put in communication with the carotid or crural artery that the vascular pressure falls rapidly.

EXCISION OF THE CRICOID IN LARYNGO-TRACHEOTOMY.

M. Panas, on the 16th June, exhibited to the Société de Chirurgie a patient on whom he had performed the operation of laryngo-tracheotomy and excised a portion of the cricoid cartilage. M. Panas thinks this operation less dangerous in adults than tracheotomy. The patient had had a phlegmon of the neck with œdema of the glottis.

CHRONIC CHLORALISMUS.

Dr. Bonfigli (*Raccoglitore Med.*, May 10) refers to some observations on poisoning by chloral when used for some lengthened period. Dr. Kirn (*Allgem. Zeitsch. fur Psy.*, xxix., p. 316) observes that, whereas he used to give from two to six grammes of chloral daily, at present he does not exceed the quantity of one to two grammes. The sedative action of chloral in disease of the brain and nerves is very variable: whilst in some patients the dose of two grammes is for a long time sufficient to produce the wished-for effect, in others the dose requires gradually to be increased, whilst in others, doses of four or even six grammes have failed to produce sleep. When the drug is long used there are noticed cutaneous eruptions referrible to functional disorders of the vaso-motor nerves of the skin—chloral erythema. The author mentions the example of a paralytic man, in whom, after taking two grammes of chloral, there arose spots of roseola on the face, nostrils, cheeks, and neck. These spots came together so as to form a diffuse erythema, with swelling and augmentation of temperature in the relative parts, and they disappeared in about an hour. The same phenomena were seen in two young males, maniacal, who were taking two or three grammes of chloral as a hypnotic, in whom the chloral erythema appeared immediately after drinking a glass of beer.

Sometimes there is seen, as in a patient of Kirn's, true urticaria. In the same way as the face, which with or without simultaneous exanthema, becomes slightly swollen from the continued use of chloral, so may other parts of the body become altered which are in the district of the vaso-motor nerves of the skin which are paralysed. Thus, in certain patients in the Lunatic Asylum of Illenan there was noticed a serous infiltration of the skin, dependent on stasis and extending to almost the whole body.

The mucous membranes visible to the eye comport themselves in a manner analogous to that of the skin: the redness and swelling of the conjunctiva of the bulb, the angina, and the redness and swelling of the epiglottis, or 'false vocal cord, are described by different authors, and are proportionate to the paralysis of the vaso-motor centre or of the medulla produced by chloral.

Reimer first called attention to bed-sores which are apt to occur when chloral is long continued.

Disorders of respiration may be slight at times, but may arise to dyspnœa. One lady suffered from grave attacks of dyspnœa, and was much fallen off in flesh. She presented during the attacks swelling of features, palsy of the facial muscles, and symptoms of cerebral œdema; she had fruitlessly used many remedies, and seemed on the brink of the grave. By accident it was found that every evening she took three grammes of chloral. As soon as this was given up, her breathing got better. This symptom depends on the hyperæmia of the lungs dependent on paralysis of the vaso-motor centre of the medulla oblongata.

SPECTRUM OF MUSCLE.

M. Ranvier communicated on the 1st June to the Paris Academy of Sciences a note on the spectrum given by the striæ of muscles. He said a spectrum is always given by muscle, whether in a state of rest or activity. Contrary to the statement of Merkel, he says the transverse situation exists in every physiological condition of muscle. He adds that certain muscular lesions deprive the tissue of the property of giving a spectrum.

SULPHATE OF SODA FOR PHTHISIS.

Drs. Zattoni and Paroscheros declare in the *Medical Journal of Athens* that sulphate of soda has proved in their hands efficacious in consumption. One or two grammes (15 to 30 grains) dissolved in 100 of water and a little aromatic syrup makes the mixture, of which a spoonful is to be taken every hour. Out of thirty-two cases, of which nine are reported in the first stage, ten in the second, and three in the third, they say they effected the cure of the first class in two months, of the second in three; and of the third one case is reported cured and the other two continue the treatment with good hopes of success.

With all the sure cures reported from time to time of various diseases it is wonderful that anyone dies at all!

THE MILK TREATMENT OF DIABETES IN THE SEVENTEENTH CENTURY.

Surgeon-Major N. Chevers, M.D., Principal, Medical College, Calcutta, contributes an interesting note to the *Indian Medical Gazette*, which well illustrates how medical history repeats itself.

In his chapter on the "History of the Milk Treatment of Disease," Dr. Donkin, whose work was noticed in the Doctor on its appearance, says that "during the seventeenth and eighteenth centuries several works were written on the therapeutic employment of milk. I may cite those of Costeas, Stephens, Short, Colombice, Ferris, and Petit-Radel." At the commencement of his tenth chapter Dr. D. says: "When the idea first occurred to me to try an exclusive regimen of milk as a remedy for diabetes, I certainly received no encouragement whatever from consulting the writings of the more recent of the acknowledged authorities on the treatment of this disease."

Dr. Chevers, having cited these passages, observes: Upon this it is interesting to notice how the milk treatment of diabetes stood in England two hundred years ago, long after a patient declared that he had an ass for his physician and a horse for his surgeon. In his "*Phthisiologia*, or, a Treatise of Consumptions," wherein Dr. Richard Morton recorded with great method, and in a style which is very readable even in the present day, the results of his long experience, ending in 1694, we are told: "If the hectick heat be considerable, and thereupon the consumption quick in its progress, it is better to temper the heat with a milk diet, than with the waters. [These were the then famous chalybeate waters of Mr. Sadler's wells, now only remembered in Spa Fields and Sadler's Wells Theatre.] But about a milk diet we must observe the following rules:—First, in the use of this diet nothing must be either allowed or taken for meat and drink but milk, and things made of milk (except bread). But they must take this food in a good quantity and frequently, for fear the parts should be deprived of their due nourishment by reason of the thinness of it. Secondly, a course of the milk diet ought to be continued a month or two."

In his chapter on "A Consumption from a *Diabetes*" he gives these two cases, which might have been written yesterday:—

History 1.—Mr. Pettit's son upon a *diabetes*, which they had a long time neglected the cure of, was not only frequently troubled with fits of the falling sickness, and a swimming in his head, but also the progress of this distemper became very consumptive. But with the use of Tunbridge waters, a milk diet, and astringent electuaries, he was perfectly recovered, and is now, after ten years, in perfect health.

History 2.—Mr. Pettit, himself, the father of the patient I just now mentioned, living in Long Lane, being then about seventy years old, who was brought by a *diabetes* into a high hectic fever, and to the utmost degree of a *marasmus*, and kept his bed for three weeks, got well of his *diabetes* and fever, and at length his consumption, too, by the use of a milk diet, which he very strictly observed, and of astringent juleps and electuaries, and is now, as far as I know, after five years, still living.

Tumeez Khan Bahadur tells me that the Byeds of Calcutta use milk largely in the treatment of dropsy. In Dr. Thomas Wise's "Review of the History of Medicine among the Asiatic Nations" I only find it laid down that, for six months after the operation of paracentesis for ascites, milk is to be freely used with rice, or the broth of wild animals with rice, and after three months half the quantity of water and milk with rice may be taken.

ENLARGEMENT OF THE OS UTERI.

Dr. Ellinger (*Memorabilien*, 1874), acting on an idea of Kœberle of dilating the cervix uteri by means of the polypus forceps, has invented an apparatus which, being like to an uterine sound in two parts, is easily able to dilate the uterine cavity in a parallel manner. This apparatus consists of a forceps with a corner point where two wires can be separated from each other whilst remaining parallel.

Since discovering this dilator, the author has no longer been compelled to enlarge the uterus in any other way. The way in which this instrument is used is by introducing the branches into the uterus, when the branches can be separated from each other to a distance of ten millimetres and more. There is no difficulty in the introduction, and no more pain than when the sound is used. The reaction is always slight.

The author uses this instrument among his out-patients, and in but rare cases did he observe any notable bleeding. He gives a number of cases to show its action.

During the relation of one of these cases he takes the opportunity to remark upon the influence such narrowness of the uterus has on the health of women and their psychical condition. He completely agrees with those authors who accept a close agreement between disease of the uterus and sympathetic disturbances.

Of course, the author recommends his instrument in cases of sterility. He has used it as an excellent method in cases of menorrhagia.

With regard to incision, he remarks that it only does momentary service, because the parts soon grow together again. It must be added that the author describes it as a great advantage for his instrument, that it can be used even by persons who are not medical; he would hand over his instrument to midwives, and even to patients themselves, or their husbands! We strongly deprecate this proposal. The author prefers this dilatation to incision, because of its certainty and want of danger.

He is a determined foe to laminaria and sponge tents, on account of the evil results sometimes caused by these, and prefers his own instrument. He dilates with this the cervix in a very short time, so that the finger can be passed in.

The author uses his instrument also as an exploratory sound. He finds advantages in it over the sound in this, that a passage into the uterus with it would be a difficult operation. Again, for the replacement of flexions he prefers his instrument to the sound.

The following are the indications for the use of the author's instrument: Narrowness of the cervix; sometimes one dilatation, he says, will cure dysmenorrhœa; stenosis from deviation of the body of the uterus; metrorrhagia, from softened or swollen uterus; retained secretion of catarrhal nature, with swelling of the membrane. For diagnosis and exploration, the author knows of no contra-indications.

CASE OF DIABETIC POISONING BY ACETONE.

Dr. Berti (*Giornale Venet.*, April, 1874) relates the case of a Venetian woman, æt. 31, who, after an attack of intermittent fever, in 1871, for two months, was attacked with diabetes. She was very anæmic and emaciated. Urine had specific gravity of 1·060, and contained about five grammes of sugar in the litre. Skin dry, teeth carious, polydipsia, and polyfagia, constipation, pruritus in micturition. There was also amblyopia. The temperature beneath the axilla was 37·5°, and she passed four to five litres of urine in the twenty-four hours. No traces of albumen were present. Dulness on percussion, and muco-crepitant rhonchus at right infra-clavicular region.

The patient suddenly fell into coma, with suppression of urine. About a drachm of urine alone was drawn off, and on examination was found to contain much sugar. There was an ethereal odour in the breath.

The diagnosis of the case made by Dr. Berti was that of poisoning by acetone.

Drastics and revulsives were given in vain, and the patient died.

Cantani speaks of four stages of poisoning by acetone. In the fourth stage, the patients lie unconscious, and appear as if they had taken chloroform.

The odour of acetone in the breath or urine is pretty well marked; the muscular debility is great, the pupils do not move, the abdomen is meteorised, the secretion of urine is suppressed, and the mucous membranes dry.

On post-mortem examination, there was found blood in the sinuses of the dura mater, venous congestion of the meninges, serum in the sub-arachnoid spaces and ventricules of the brain, the brain substance slightly softened, but no apparent alteration of the fourth ventricle. The lungs were congested and œdematous, the apex of the right hardened, and but slightly permeable to the air, from induration of the interstitial tissue. The liver was greatly congested and hardened, spleen normal, kidneys anæmic, but unaltered in anatomical structure.

There was an odour of acetone from the open cranium.

Some of the blood in the right ventricle of the heart was taken, a piece of liver, brain, and kidney were analysed.

These four parts all gave acetone when distilled with distilled water, and also sugar.

TREATMENT OF ULCERS BY CARBOLIC ACID.

Dr. Dawosky, of Celle, (*Memorabilien*, May 30, 1874) mentions that he has treated many ulcers lately with a solution of carbolic acid in water of a strength of 2 per cent. Compresses dipped in this solution were placed on the ulcer, and larger ones, dipped in the same, were placed above these. Round these was placed some india-rubber cloth, and this was kept fast with a band. During the first days he renewed the compresses every hour. Afterwards, when the ulcer had assumed a healthy and fresh appearance, and the secretion was no longer fœtid and purulent, the bandage was replaced every twenty-four hours by a new one. He says that this treatment gave unhoped-for results. Whoever knows in what a condition those affected with such diseases come into hospital, and how through neglect of cleanliness and wrong-directed treatment such ulcers not only attain an enormous size, but shed abroad a pestiferous stench, will also confess that such ulcers are a plague to patients around. In a former paper Dr. Dawosky praised hot aromatic bandages, but he now confesses that he has entirely abandoned these since he became aware of the admirable working of carbolic acid. Even in two or three days the appearance of the ulcers is quite different, and the horrible fœtor has disappeared. Whether this is caused by the keeping off or destruction of the bacteria and vibrios which would attack the wound, he does not know. He has however, remarked that lymphatic ulcers take far longer to heal, and are not closed for a long time.

He had the opportunity, in two patients who were suffering from ulcers of the shins, to remark this. In one of the cases, an artisan of 40 years of age, there was clear evidence of varicose ulcer. The ulcers were extended over the whole of the shin, the bone greatly swollen, the secretion was great, and the fœtor unbearable. In the other the ulcers were not so extensive, but the ankle was greatly enlarged, the foot thick and deformed, as if elephantine. This patient, æt. 50, had long suffered from the disease. In both the treatment was commenced at the same time: in the first case the cure took place rapidly: in two days the stench and evil aspect of the ulcers disappeared, and in six weeks the patient was allowed to go home. The second was still under treatment. The ulcers, indeed, are not large, and of good appearance; but their decrease in size was a slow process, and only in proportion as the swelling of the bone became less.

DYSPEPSIA.

DR. LEVEN (*Lyon Médical*, No. 7, 1874) read recently in the Academy of Medicine a paper on the physiology pathology of the stomach, and particularly concerning dyspepsia. According to Leven, the stomach has only the secondary part to play in digestion—it reduces, by means of its movements, and the juices secreted, the volume of the aliments, breaks them up, and facilitates their entry into the intestines; thus, its function is that of a triturating machine.

The ingestion of nitrogenous substances does not augment the secretion of gastric juice, but produces a great amount of watery fluid, due to exosmosis from the capillaries of the mucous membrane.

According to this author, dyspepsia is an affection of the stomach characterised by an aqueous secretion, which retards digestion and injures it.

This hypersecretion is in some way commenced by the organ to get rid of foreign bodies, over which it has little power, and which are expelled in a quantity of fluid. Perhaps in all cases of dyspepsia the predominant symptom is hypersecretion of fluid; and treatment should be directed against this. But the classic remedies, such as quinine, carbon, pepsine, &c., are usually inefficacious. Doubtless these often give relief, but rarely cure. For this reason, Dr. Leven has abandoned these, and makes use of the following treatment, which in many cases has cured even the most inveterate dyspepsia. He advises his patients to take small doses of neutral salts, or others attacked with difficulty by the stomach, sulphate of soda, phosphate of soda, phosphate of lime, chloride of sodium, or bromide of potassium. He never gives doses larger than from four to eight grains in the day of such remedies, and soon notices an improvement in the symptoms of dyspepsia: the swelling of the stomach diminishes, the secretion is less exaggerated, and the disease is gradually cured. Besides this, a diet easily digested is recommended.

AN UNUSUAL CASE OF LATENT DISEASE.

DR. ANDREW DUNLOP relates the following in the *Lancet*:—

At 1.30 a.m., on the 30th of October last, I was called to the country to see a young lady, who, I was told, had been complaining for a day or two, but had got much worse towards evening, and had fainted just before I was sent for. On reaching the house, I found that the patient had died almost immediately after the messenger left the house, at 11 o'clock the previous evening.

The young lady was eighteen years of age; and the history was, that she had always been well until about two years and a half ago, when she had a "rheumatic attack" which confined her to bed for four or five days. For a short time afterwards she suffered from palpitation; but after this passed away she was quite well until the 26th of October last, when she began to complain of pain at the epigastrium, which she thought was due to indigestion. On the morning of the 29th she was much better, but in the evening she felt rather faint, and her breathing was somewhat affected. She went to bed at 8 P.M., and had a mustard poultice applied to the chest, and some sal volatile was given to her. At about 11 p.m. she felt worse, and was sitting up in bed to take another dose of sal volatile, when suddenly she sank back in a fainting state, and died in about five minutes afterwards.

Autopsy, seventeen hours after death.—The examination was made with the kind assistance of Dr. Morison. The rigor mortis was tolerably well marked. Body well nourished. The right pleural cavity was distended with serum, and there were numerous recent adhesions to the upper third of the anterior surface of the lung. The left cavity contained rather more than a pint of serum, and there were a few adhesions, also recent, in the same situation as those on the other side. The lungs were somewhat congested at the bases, but otherwise normal. The heart was much enlarged, and the pericardium was almost universally firmly adherent, the adhesion being evidently of old date. The left ventricle was hypertrophied and dilated; and the right ventricle was dilated, and perhaps somewhat hypertrophied. The flaps of the mitral valve were roughened and thickened at their margins, and some of the chordæ tendineæ were shortened. The tricuspid valve was also roughened and thickened at the margin. The aortic and pulmonary valves were normal. There were some patches of recent lymph upon the upper surface of the liver. The abdominal organs were congested, but otherwise normal. Brain not examined.

GUAIACUM IN SYPHILIS—HOW TO GIVE IT.

DR. A. MCBRIDE, in a letter to the Cincinnati *Lancet and Observer*, thinks the chief reason guaiacum has fallen into disuse is that it is so hard to get into the stomach in sufficient doses. In the case of the decoction large doses require to be taken for months. But this is not so bad as the tincture; for however made up, it is repulsive, and soon becomes intolerable. It should then be made up into pills, which will be taken readily enough; but the success of the pills, he says, depends upon how they are made. Alcohol is the only proper excipient. The resin should be powdered, and ligneous and cortical impurities be sifted out; the mortar, pestle, and pill-machine should be warm, and a very little alcohol added; it can then be made up quickly into pills, which will keep well. Of these about a dozen can be taken daily, and they answer well for secondary and tertiary manifestations (especially cutaneous) of syphilis.

We would advise pills to be given when guaiacum is prescribed, as it still sometimes is, for rheumatism.

BILLROTH ON THE EXTIRPATION OF EXTENSIVE CARCINOMATOUS GROWTHS OF THE TONGUE FROM THE REGIO SUPRA-HYOIDES.

IN circumscribed growths of the tongue extending from the mouth, especially those reaching far backwards, Billroth finding the space insufficient for the operation of extirpation, either with the écraseur, galvano-caustic, or the knife, even after sawing through the symphysis of the superior maxillary bone or splitting off the cheek, selected a method introduced by Cloquet, followed by Regnoli. He was not acquainted, however, with the operations of these surgeons, and his own plan is given in the new *Centralblatt f. Chir.*

After the mouth of the patient has been cleansed with the greatest possible care for several days, a transverse incision 5-6 cm. long is made, close to the lower margin of the inferior maxillary down to the bone, its centre corresponding with the middle of the chin. From this two longitudinal incisions 3 cm. long, passing through the integument and platysma myoides, are made on both sides almost directly downwards. From the transverse incision, the periosteum and the muscles are separated and the cavity of the mouth opened, and then as far as necessary, the side incisions are carried into the mouth. The tongue is then pulled out from below, and all that is diseased (especially the lymphatic glands), are removed from the side incisions.

The transverse incision is then completely united, also the front part of the side cuts. The mucous membrane of the stump of the tongue is pulled out to the side and fastened with sutures in the inferior angle of the side cut, if that is possible, without partially twisting the epiglottis or larynx. Swallowing is thereby facilitated, and drainage of the secretions promoted. During the after treatment, the patient remains in half sitting posture, head inclined forward. The patient is fed through a stomach tube for three weeks. Billroth has performed nine operations of this kind, Czermy one. Of these ten patients six recovered, three died of diphtheria, one of pyæmia.

BLUE PUS.

Pus, and the dressings of neglected wounds sometimes show a blue colour. The *American Journal of the Medical Sciences* contains an article on this subject condensed from the *Medical Times and Gazette*, and one from the *Archives Gen. de Méd.* This blue colour of pus may become epidemic, as was the case in M. Gosselin's wards in the Charité at Paris. Cases are also on record in which the normal secretions, as sweat, milk, and urine, have been of this colour. Two sources for the colour are indicated: one, the hæmoglobin; the other, the indican of the urine. Hæmoglobin, effused, assumes the varying colours seen in a bruise; in an old clot it becomes hæmatoidin, identical with the red colouring matter of the bile. The action of nitric acid, which is a process of oxidation, produces a blue tint in the bile. Perhaps a similar oxidation of hæmoglobin gives rise to the blue of the secretion, or the pus.

Various theories have been advanced to explain the blue colouring of the dressing wounds. One, favoured by Lucke, is that it is due to vibrios. This theory of the vibrios would explain the epidemics, if we might so call them, which occur where there is a neglect of cleanliness, in a hot, moist weather.

A blue colouring matter, called pyocyanine, has been isolated from blue pus, which resembles indican, a blue colouring matter, occurring as a normal constituent of urine, and probably of the blood also. This indican may be the source of the blue colour of the pus and secretion.

The *Archives de Méd.* considers the blue colour to be of three kinds: 1st. The colouration resulting from the modification of certain humours—or true blue colouration; 2nd. Colouration due to fungi—false blue colouration; 3rd. Colouration due to a substance still unknown—false blue suppuration, The name *cyanchorse* is proposed for the last. It commences and ceases suddenly, not only where there is a wound, but where the parts are sound. Its duration is variable. It produces no modification in the local condition of the wound, or the general health of the patient. Its progress is similar to that of erysipelas. It is sometimes epidemic. It occurs most frequently when the atmosphere is moist and warm and contains ozone, and during storms. Its presence is a favourable prognostic.

NEW ANTISYPHILITIC.

Dr. C. C. Graham, in the *American Practitioner*, says: "I desire to make known to the medical public a discovery I made many years ago, of a vegetable cure for syphilis. This is a tincture of datura stramonium and phytolacca decandra. Of the best proportions of the ingredients I am not now able to speak with confidence, but my recollection is that I made the tincture of one ounce of the stramonium-seed and half a pound of the poke-root to two quarts of common whisky. I am sure I have, in the last fifty years, treated by this tincture twenty cases of syphilis, many of them of the worst form, with perfect success. It is proper to add that I got the hint of poke-root as a remedy in the disease as long ago as 1815, when I was a pupil in Dr. B. W. Dudley's office, at Lexington, where I saw it given successfully in the case of a negro man."

TOPICS OF THE TIME.

THE LIVER AND ITS DISEASES.

There has been of late a tendency to revive some of the old doctrines as to the importance of the liver, and Dr. Murchison's Croonian Lectures at the College of Physicians will give an impetus to this tendency. When we went to hear him we were particularly struck with the number and character of his audience at the first lecture. There was evidently a desire among the elderly and middle-aged to hear what it was rumoured Dr. Murchison had to say against the theory espoused by many of their younger brethren, that the importance of the large viscus had been exaggerated; and there was deep disappointment and vexation among some as they passed out of the College murmuring that they had been entrapped into an anatomical lecture. Those who did not refuse to lend their presence to the other lectures were, however, compensated for their patience, for Dr. Murchison spoke out, and what he said should be well pondered. We doubt not the other side will again be heard, and indeed, Professor Hughes Bennett will naturally be expected to give his disciples some sign. Meantime let us gather some of the teachings of the redoubtable champion of the liver as a prime mover in many morbid conditions.

In his first lecture Dr. Murchison endeavoured to show that the secretion of bile was not the most important function of the liver, but that it contributed to the sanguification and nutrition of the tissues, and was the chief seat of the disintegration of albumenous matter. The secretion of bile too was pronounced only partially excrementitious, and it was said to aid assimilation.

In his second lecture Dr. Murchison described some of the consequences of "abnormal disintegration," which, we take it, is a term for the effects of what our forefathers called "sluggish liver," and of these he gave an account that would have rejoiced the heart of many an experienced man who has held on to his faith in clinical facts in spite of theories that seemed supported by trustworthy experiments.

Excluding those cases in which deposits of lithic acid or lithates are thrown down in the urine not until twelve or twenty hours after its emission, as the result of spontaneous changes, to which Scherer has given the name of acid urinary fermentation, and those which are due to a marked deficiency of urinary water, deposits of lithic acid, lithates, and abnormal pigments, which appear in the urine as soon as it cools, are chiefly met with under the following conditions.

1. In febrile diseases, in which we know that the liver becomes enlarged and congested, and its gland-cells loaded with minute granules, and in which there always is an increased disintegration of albuminous matter. Every one, for example, is familiar with the copious deposits of lithates which are so common during an attack of ordinary febrile catarrh.

2. In many structural diseases of the liver, and particularly in those which are characterised by an increased amount of blood in the organ, such as inflammation, cirrhosis, cancer, and simple hyperæmia, whether mechanical or active.

3. In functional derangement of the liver, either temporary or persistent.

As to this third cause of an excess of lithic acid in the urine, Dr. Murchison maintains that lithuria, like glycosuria, is very often due to a functional disease of the liver, although even glycosuria is still ranged in some text books with albuminuria and diseases of the kidneys. In other words, abnormal disintegration of albuminous matter in the liver may lead to a morbid condition of the blood and of the entire system, which often manifests itself in lithuria. This morbid state of the blood, which Austin Flint calls uricæmia, Dr. Murchison designates lithæmia, and speaks of as follows :—

"*Lithæmia.*—When oxidation is imperfectly performed in the liver, there is a production of insoluble lithic acid and lithates, instead of urea, which is the soluble product resulting from the last stage of oxidation of nitrogenous matter. Persons who habitually enjoy the best of health are liable to deposits of lithates in the urine after a surfeit of food, or even after partaking moderately of one of the fashionable dinners of the age. Under these circumstances, an excess of work is thrown upon the liver and the other glandular organs, and one result is that a quantity of albumen, instead of being converted into urea, is discharged by the kidneys in the less oxidised form of lithic acid or its salts. But what in most persons is an occasional result of an extraordinary cause, is in some almost a daily occurrence, either from the diet being always excessive in amount or unduly stimulating, or from some innate defect of power, often hereditary, in the liver, in virtue of which its healthy functions are liable to be deranged by the most ordinary articles of diet. Most persons appear to have more liver, just as they have more lung, than is absolutely necessary for the due performance of its functions. But in others, not unfrequently the offspring of gouty parents, the organ, in its natural condition, seems only just capable of performing its healthy functions under the most favourable circumstances, and functional derangement is at once induced by articles of diet which most persons digest with facility. This functional derangement may manifest itself by various symptoms of "indigestion," by disturbances of circulation and of other physiological systems, but especially by deposits of lithic acid, lithates, and pigments in the urine. These deposits, it is true, are often absent, and yet the urine may contain a great excess of lithic acid. Indeed, as Dr. Bence Jones has shown, clear urine sometimes contains more lithic acid than that which thickens on cooling. But the frequent deposit of lithates shows that oxidation is less perfect than it ought to be. Very often, however, these urinary deposits exist for years without the patient experiencing any general or local discomfort. But sooner or later, often about middle life, lithic acid and lithates are formed in such excess that they cannot be eliminated by the ordinary channels, and they accumulate and create disturbance in different parts of the organism, and then the urinary deposits begin to attract more attention than they had previously done, from their being accompanied by symptoms of indigestion, or from the evidence of some serious local mischief, the onset of which had been insidious. These symptoms are all the more likely to occur if the patient be what is commonly known as "a generous liver," if he take little exercise in the open air, or if he have much mental work. Of the symptoms referred to, the most common are the following : *a.* A feeling of weight and fulness at the epigastrium and in the region of the liver. *b.* Flatulent distension of the stomach and bowels. *c.* Heartburn and acid eructations. *d.* A feeling of oppression and often of weariness and aching pains in the limbs, or of insurmountable sleepiness after meals. *e.* A furred tongue, which is often large and indented at the edges, and a clammy, bitter, or metallic taste in the mouth, especially in the morning. *f.* Appetite often good; at other times anorexia and nausea. *g.* An excessive secretion of viscid mucus in the fauces and at the back of the nose. *h.* Constipation, the motions being scybalous, sometimes too dark, at others too light, or even clay-coloured. Occasionally, attacks of diarrhœa, alternating with constipation, especially if the patient be intemperate in the use of alcohol. *i.* In some patients, attacks of palpitation of the heart, or irregularity, or intermission of the pulse. *k.* In many patients, occasional attacks of frontal headache. *l.* In many patients, restlessness at night and bad dreams. *m.* In some patients, attacks of vertigo or dimness of sight, often induced by particular articles of diet.

"All of these symptoms are liable to occasional aggravations from errors in diet. Gradually the patient is taught by experience to become more careful as to what he eats or drinks. One thing after another he is compelled to give up. First, he renounces malt liquors; then he discovers that port wine, madeira, champagne, and burgundy disagree, and he betakes himself for a time to "dry sherry;" but at length this does not suit, and after an interval, during which a trial is made of claret or hock, the patient, probably under medical advice, finds temporary relief from the substitution for wines of brandy or whisky largely diluted with water. At last, unless he be misled by the fashionable, but to my mind erroneous, doctrine of the present day, that alcohol in one form or another is necessary for digestion or to enable a man to get through his mental or bodily work, he finds that he enjoys best health when he abstains altogether from wine and spirits and drinks plain water. The patient goes through a like experience with regard to solid food; one dish after another, very often what he likes best, has to be given up, until at length, if he be well advised and have the sense to follow the advice, he restricts himself to the plainest food in moderate quantity. As a rule, those articles of diet are most apt to disagree which contain much saccharine or oleaginous matter, and not, as might perhaps have been expected, nitrogenous food if plainly cooked. In most of these cases, the digestion appears to be strongest in the morning, and the patient suffers from late dinners or suppers."

The picture thus drawn represents a morbid condition extremely common in this country, which is associated with a constant tendency to the deposit of lithic acid or lithates in the urine, and which Dr. M. believes to originate in functional derangement of the liver. We next come to gout, and our next extract shall be respecting that:—

"*Gout.*—But, secondly, you cannot fail to recognise that this picture represents a train of symptoms very common in gouty people, and to which the terms 'gouty dyspepsia,' 'latent gout,' 'suppressed,' 'anomalous,' or 'irregular gout' have been applied; although what I desire to maintain is, that they are also very common in persons who neither inherit articular gout, nor ever have it themselves. Gout itself, however, is merely one of the results of lithæmia. Thanks to the researches of our colleague, Dr. Garrod, we now know that gouty inflammation of a joint is due to various exciting causes, which it is needless here to enumerate, determining a local deposit of lithate of soda, which has previously existed in abnormal quantity in the blood, as well as in the fluid that exudes from it into all the textures of the body. The accumulation of this substance in the blood will, no doubt, be favoured by non-elimination consequent upon disease of the kidneys; but in most cases of gout the kidneys are in the first instance healthy, and the presence in the blood or tissues of lithic acid or its salts is the result of imperfect digestion, or more strictly of functional derangement of the liver. Articular gout is, so to speak, a local accident, which may occur at any time in persons in whom the normal process by which albumenous matter becomes disintegrated in the liver into urea is persistently deranged. In other words, gout, like diabetes, is the result of a functional derangement of the liver; and just as we found that in many persons in whom there is no evidence of articular gout an innate defective power of the liver, in virtue of which its functions are deranged with unusual facility, is often transmitted by parents to their offspring, so gout, which is one of the consequences of that condition, comes to be an hereditary disease. I hold, therefore, that what is called a 'gouty diathesis' always indicates, and is the result of, hepatic derangement, and that many symptoms commonly referred to gout would be more correctly ascribed to disorder of the liver."

Other conditions referred as confidently to the liver are calculi, renal, and biliary, degenerations throughout the body, and a host of morbid states constantly under every practitioner's notice. A long series of derangements of the digestive and nervous systems, of the organs of circulation and respiration, of the urinary organs, and of the skin, were all traced to the liver, as in the good old times, before anyone had dared to call in question that this organ is constantly at fault, or that we really possess cholagogues.

Functional derangements of the liver, when primary, may be due to a variety of causes. Of these one of the principal, says Dr. M., is:—

"*Errors in diet.*—There can be no doubt that the present system of living, and especially the consumption of even what are regarded as average quantities of rich food and stimulating drinks, contribute largely to derange the liver. It will be generally admitted, nor would it be difficult to prove, that most persons are in the habit of eating a quantity of food far greater than suffices to maintain the nutrition of the body. Much of this excess is fortunately never assimilated, and is got rid of in the fæces; but very often much more is taken into the blood than can be converted into tissue, or pass through the ordinary processes of oxidation preparatory to elimination. The result is that the excess of food is thrown out in an imperfectly oxidised form by the kidneys, lungs, &c., or accumulates in the system; while more work is thrown upon the liver than it can readily perform, and functional derangement of the organ ultimately ensues. With regard to individual principles of food, speaking generally, it may be said that the liver is most apt to be deranged by saccharine and fatty substances. The derangement of the liver which leads to lithæmia or gout is more likely to be induced by even small quantities of these substances, than by a moderate excess of purely nitrogenous food, such as meat. Cooked articles of diet containing a large proportion of both sugar and fatty matter are in many persons certain to derange the liver. The excess of carbon in these substances must either be deposited as fat, or must take away the oxygen, so as to leave little free to act on the nitrogenous matter passing out from the tissues or derived from the food.

"But of all ingesta the various alcoholic drinks are most apt to derange the liver. They do so in two ways. *a.* They may cause persistent congestion of the liver. Even small quantities of alcohol in healthy persons produce a temporary hepatic congestion; but if alcohol be taken in excess, or too frequently, the congestion of the liver becomes permanent, and the functions of the organ are deranged. Like results may ensue from comparatively small quantities in certain persons, who may be said to have a constitutional intolerance of alcohol. Of course, if the congestion be long maintained, structural disease may follow. *b.* But wines and other alcoholic drinks often cause derangement of the liver, which a corresponding quantity of pure alcohol would not produce, and which, in fact, cannot be accounted for by any one ingredient of the offending liquid—neither by the free acid, the ether, the salts, gum, sugar, or extractive matter. This general rule, however, I believe holds good, that the injurious effect of alcoholic beverages upon the liver increases in a direct ratio without the amount of sugar plus alcohol which they contain. It would seem, indeed, that a mixture of alcohol and sugar produces injurious results which would not be caused by the admixture of a much larger quantity of sugar, or of alcohol alone, with the food. In accordance with this view, the alcoholic drinks which are found from experience to be most apt to disagree with the liver are malt liquors of all sorts, but especially porter and the stronger forms of mild ale, port wine, madeira, tokay, malaga, sweet champagne, dark sherries, liqueurs, and brandy; whilst those which are least likely to derange the functions of the organs are claret, hock, moselle, dry sherry, and gin or whisky largely diluted, "Derangement of the liver from excessive eating or from other errors in diet usually first shows itself in middle life—from thirty-five to forty-five. Young people, who take much exercise, and whose bodies are still undergoing development, require more food, and can often with impunity eat more than they require. But by the age of forty the body is fully developed, and most persons take less exercise than before, while at the same time they often indulge more freely at table. At any age errors in diet will be all the more likely to tell upon the liver if there be any constitutional weakness in the functional power of the organ."

The treatment of functional derangements of the liver Dr. M. groups under—1. Diet; 2. Free supply of oxygen; 3. Aperients—Cholagogues; 4. Alkalies; 5. Chlorine, Iodine, Bromine, and their salts; 6. Mineral acids; 7. Tonics; 8. Opium.

As to diet, we will quote exactly what Dr. M. states, that our readers may compare it with the passage we have cited on "errors in diet":—

"1. *Diet.*—In functional derangements of the liver much more permanent benefit is to be expected from careful regulation of the ingesta than from physic. It must not be forgotten that what may ultimately destroy the body too often enters by the same portal as that which is intended to nourish and maintain it. It is also well to remember that the hepatic derangement resulting in lithæmia may exist for years without any other symptom than the frequent deposit of lithates or lithic acid in the urine, and is then curable by attention to diet alone; but that, if neglected, it may ultimately develope gout, structural disease of the liver or kidneys, or some other serious results. Habitual lithæmia ought, therefore, to be always counteracted, and, from what has been already stated, it seems clear that the foods mainly to be avoided are saccharine and oleaginous articles, and especially cooked dishes containing both of these substances. Patients with lithæmia ought always to avoid made-up or highly seasoned dishes. In severe cases, potatoes, rice, sago, and fruits may have to be given up, and even bread must betaken in moderation. It will also always be well to ascertain if the lithæmia be due to any of those idiosyncrasies in virtue of which particular articles of diet are apt to derange the liver. In most cases of lithæmia, a diet consisting chiefly of stale bread, plainly cooked mutton, white fish, poultry, game, eggs, a moderate amount of vegetables, and weak tea or coffee, answers best. The quantity, as well as the quality, of the food must be attended to. Habitual lithæmia often results from the patient taking more food than can be converted into tissue or disintegrated in the liver. As Dr. Bence Jones has observed with regard to gout, so in habitual lithæmia, 'a minimum of albumenous food should be taken, in order to produce the least uric acid; and a minimum of carbonaceous food, in order to allow the uric acid to be oxydised as much as possible.' In obstinate cases, the patient may be advised to take his principal meal in the morning, when the digestive powers are strongest. The free use of diluents, such as soda and seltzer waters, is also useful, as they help to eliminate from the system the morbid products of disintegration.

"Still greater caution is necessary in all forms of lithæmia, as to alcoholic stimulants. Malt liquors, port wine, champagne, and many other wines, ought to be strictly prohibited. Claret, or a small quantity of spirit largely diluted, as a rule, answers best; but even these should be taken sparingly, and many patients do best with no stimulants at all. This is not the occasion to discuss whether alcohol is necessary for the nutrition of the body in persons subjected to much mental or bodily toil, or whether, taking the masses in all walks of life, the standard of health would be better maintained by teetotal habits or by a moderate use of alcohol. What I desire now to insist upon is, that alcoholic drinks in quantities usually regarded as compatible with, if not conducive to health, and far short of what are necessary to affect the brain, in many persons undermine the foundations of health by deranging the liver, and that to some individuals even very small quantities are injurious. In persons who have been indulging largely, the risk of a sudden withdrawal of stimulants is less, I believe, than is commonly imagined. Unless there be evidence of a very weak heart, which itself may be the result of alcohol, the only unpleasant effects of sudden and complete abstinence, in my experience, have been sensations of sinking at the epigastrium and craving for alcohol, which a repetition of the stimulus has only temporarily relieved and has rendered more persistent."

2. *A Free Supply of Oxygen*, including out-door exercise, sea-air, and sea-bathing, is recommended.

3. *Aperients; Cholagogues.*—In a large number of cases of functional derangement of the liver, great advantage is derived from the frequent use of aperient medicines, whether there be a tendency to constipation or not. The various saline aperients are spoken of, but our readers will prefer to hear Dr. Murchison's views on cholagogues. He says:—

"Among these remedies *mercury* and its preparations hold a pre-eminent place. At the present day, mercury has lost much of its former reputation as a cholagogue and alterative, and there is much difference of opinion as to its power over the liver. The practical physician gives a dose of calomel, finds the quantity of bile in the motions greatly increased and his patient's state much improved; and he argues that the liver has been stimulated by the mercury to an increased secretion of bile, and that to this cause his patient's improvement must be ascribed. The physiologist, on the other hand, ties the common bile-duct in one of the lower animals, produces a fistulous opening into the gall-bladder, and then finds that calomel has no effect on, if it do not diminish, the amount of bile that drains away through the fistula."

Having referred to the experiments, Dr. M. said, it has been fairly objected that the results of experiments with mercury upon dogs do not warrant conclusions as to its effects upon man; and, even granting that in man mercury does not increase the quantity of bile secreted by the liver in health, it does not follow that in disease there may not be some condition adverse to the formation of bile which mercury may have the power of removing. Much, however, of the difference of opinion between the physiologist and the practical physician may be reconciled by keeping in mind the osmotic circulation, as constantly going on between the intestinal contents and the blood. A large part of the bile secreted by the liver and thrown into the bowel is constantly being reabsorbed, to reach the liver again; and accordingly, when the common bile-duct is tied and a fistulous opening into the gall bladder established, the quantity of bile which escapes from the fistulous opening immediately after the operation is much greater than at any time subsequently (Schiff). Mercury and allied purgatives produce bilious stools, by irritating the upper part of the bowel and sweeping on the bile before there is time for its reabsorption. The fact of mercury standing at the bottom of the scale of cholagogues in Röhrig's experiments is accounted for by its surpassing other cholagogues in this property; for, of course, the larger the quantity of bile that is swept down the bowel, the less is reabsorbed and the less escapes from a biliary fistula.

"That mercury does act especially upon the duodenum," Dr. M. says, "is proved not merely by the large flow of bile which follows its action, but by the fact discovered by Radziejewski, that leucin and tyrosin, which are products of pancreatic digestion, under ordinary circumstances decomposed in the bowel, appear in the fæces after the administration of mercurials. It would appear, then, that mercury, by increasing the elimination of bile, and lessening the amount of bile and of other products of disintegrated albumen circulating with it in the portal blood, is after all a true cholagogue, relieving a loaded liver far more effectually than if it acted merely by stimulating the liver to increased secretion, as was formerly believed, and as some authorities still maintain; for in this case it might be expected to increase, instead of diminish, hepatic congestion. It is not impossible, also, that the irritation of the duodenum by calomel and other purgatives may be reflected to the gall-bladder, and cause it to contract and discharge its contents, and thus account in part for the increased quantity of bile in the stools.

"There are also, I think, grounds for believing that, apart from its increasing the discharge of bile from the bowel, mercury exerts a beneficial action in many functional derangements of the liver, in whatever way this is to be explained. Patients of the greatest intelligence suffering from hepatic disorders constantly declare that they derive benefit from occasional or repeated doses of mercurials, which no other medicine or treatment of any sort confers; and the scepticism of the most doubting physician would, I believe, be removed, should he unfortunately find it necessary to test the truth of their statements in his own person. It is not impossible that the good effects of mercury on the liver, and in some forms of inflammation, may be due to its property of promoting disintegration. Mercury appears to have the power of rendering effused fibrin less cohesive, and so more easily removed by absorption than it otherwise would be. Modern physicians of high standing, and little likely to be accused of credulity as to the beneficial action of drugs, have thought that mercury is useful in croup, by causing a degradation and disintegration of the plastic membrane. If this be so, it seems not improbable that mercury, which from experiments we know to reach the liver, may under certain circumstances act beneficially by promoting, or in some way influencing, the disintegration of albumen. The remarkable effect of mercury on constitutional syphilis probably admits of a similar explanation. But in whatever way it is to be explained, the clinical proofs of the efficacy of mercury in certain derangements of the liver are to my mind overwhelming. I say so the more advisedly, because I was taught to regard mercury as a remedy worse than useless, not only in hepatic diseases, but in syphilis; it cannot, therefore, be said that the convictions forced upon me by experience are the result of preconceived opinions."

Podophyllin is a remedy which seems to act in a very similar manner to mercury. It has a special affinity for the small intestines, and especially for the duodenum, but is less certain in its action, and even in moderate doses more likely to cause griping and mucous stools than the preparations of mercury.

Colocynth, Aloes, Rhubarb, Senna, and Jalap are also useful aperients in functional derangements of the liver resulting in lithæmia, constipation, or deficient excretion of bile. The experiments of Röhrig seem to show that they actually increase the amount of bile secreted by the liver. *Colchicum* also is a useful adjunct to other aperients in cases of liver derangement with lithæmia. According to Dr. Garrod, it "may often be given with advantage to gouty subjects as a cholagogue in lieu of the preparations of mercury," which are often contra-indicated in chronic gout with renal disease.

With these remedies we may include *Taraxacum*, which has long been thought to exercise a specific action upon the liver, but which probably acts mainly as a mild aperient. When there is a tendency to constipation, it may be advantageously combined with either alkalies or mineral acids.

4. *Alkalies.*—Next to aperients, alkalies are the most useful drugs in the treatment of functional derangement of the liver. In lithæmia and in many of the symptoms which spring from this morbid state, the greatest benefit is often derived from a course of alkalies—such as the alkaline salts of potash, soda, or lithia, or some of the alkaline mineral waters, such as those of Vals, Vichy, or Ems.

5. *Chlorine, Iodine, and Bromine* are closely related in their chemical properties, and are believed to promote oxidation in the body by taking hydrogen from water and liberating oxygen. Muriate of ammonia has obtained a reputation in India and other tropical countries for the treatment of hepatic congestion; and Dr. M. found it of great service in the functional derangement of the liver attended by lithæmia. Given in scruple doses three times a day, he says, it acts as a diaphoretic and diuretic, and exercises a powerful influence in relieving the portal circulation. It is not oxydised, but passes out of the system unchanged in the urine. According to Böcker, it increases the nitrogenous solids of the urine; the mean daily increase of urea under its use he found to be not less than seventy-four grains—a quantity indicating a vast augmentation either of metamorphosis or of elimination, but from its beneficial effect on the liver, most probably of the former, it may be combined with either alkalies or mineral acids.

6. *Mineral Acids* have been thought to augment the

flow of bile; but there is no good evidence of this, either clinical or experimental, the chief good which they effect is probably that of improving the gastric digestion. In some cases, both acids and alkalies may be given advantageously—the alkalies before, and the acids after, a meal.

7. *Tonics* are apt to disagree in many cases of functional derangement of the liver, especially derangement resulting in lithæmia. According to Dr. Bence Jones, iron is one of the two potent remedies we possess for indirectly promoting oxydation in gout as well as in other maladies; whereas, in Dr. Garrod's opinion, the preparations of iron are very likely, when indiscriminately given to gouty subjects, to excite a paroxysm of the disease, and for the most part are contra-indicated. Dr. M. coincides with Dr. Garrod; and in simple lithæmia has constantly known iron to increase the tendency to deposits of lithates in the urine, constipate the bowels, and aggravate other symptoms. As a rule, also, he has found that patients with chronic gout or with lithæmia do not tolerate even small doses of quinine, although, from some careful experiments made by Dr. Ranke of Munich, quinine appears to have the power of diminishing the amount of lithic acid in the urine.

8. *Opium* and its preparations are contra-indicated in most functional derangements of the liver, and particularly when there is evidence of lithæmia. On the other hand, in the functional derangement which exists in diabetes opium is tolerated in large doses, and is often of signal service in checking the formation of sugar.

THE ACTION OF THE BILE IN PROMOTING THE ABSORPTION OF FATS.

If we turn now to a consideration of the uses of the bile—a point dwelt upon above—we find other contributions deserving our attention. First of these is an essay by Charles H. Williams, A.B., of Boston, to whom was lately awarded the first prize of the Roylston Medical Association. This essay details several series of experiments made by the author in Dr. Bowditch's laboratory, at the Harvard School, with a view to determining the action of bile in promoting the absorption of fats.

After some less exact experiments had been given up, the following apparatus was then constructed. A piece of brass tube, about a foot long, was bent to a U shape, one arm being longer than the other. To the top of the shorter arm was soldered a brass plate, having a hole in the centre; upon this was placed a similar plate; the two were then ground to fit, and held together by four screws. The whole was held by a suitable stand, so that the plates were horizontal. To the longer arm a pipe was tightly fitted, which connected the tube with a pressure apparatus, consisting of the ordinary arrangement of two bottles, the mercury in that which is placed on the higher level running into the other and compressing the air in it. The amount of pressure was indicated by a manometer tube.

In using this apparatus, the following order was followed. The brass tube was first filled with the oil, or emulsion, which it was desired to pass through the membrane, until the oil was on a level with the lower brass plate. Next, the membrane, dry, or previously soaked in some fluid, was laid on the brass plate, no air coming between the membrane and the oil. The second plate was then put on and screwed down; and if the membrane had been previously wet with any fluid, a few drops of that fluid were placed upon it, to make sure that it should be kept moist. Next, the pressure apparatus was connected with the brass tube, clamped on, and the bottle of mercury raised until the manometer tube showed the requisite pressure. The time was then noted. After this, the membrane was watched with a Hartnack microscope (objective 2, eye-piece 3) placed vertically over it, until the drops of oil were seen coming through, when the time was again noted. The difference between the times gave the minutes and seconds required for the oil to penetrate the membrane.

Experiments were made with parchment paper, dry; wet, with water, oil, and bile, at various pressures. From numerous experiments it was found that, with each pressure, oil came through a membrane moistened with bile faster than when it was moistened with water, though not so fast as when dry. There was found, however, to be a great variation between the different experiments at the same pressure, and at times the oil would well up rapidly through some thin spot of the paper, before it had appeared on any other part. Also, on removing the oil from some of the pieces, by soaking in ether, drying, and repeating the experiments, the results were very unsatisfactory.

A new membrane was therefore sought for, which should be as homogeneous as possible, and sufficiently porous to admit of oil passing through without much difficulty. As the membranes through which absorption takes place must be supposed to contain minute capillary spaces through which the fats find their way, an endeavour was made to construct an artificial membrane or substance which should consist mostly of minute capillary spaces. For this purpose, sheets were made of plaster of Paris, the thickness being reduced until one millimetre was reached. They were prepared by pressing out this fluid plaster between pieces of thick plate glass, separated from each other one millimetre. When quite firm, the plaster was removed, and while translucent, all portions containing air bubbles were marked; the cake was then dried, and cut into squares for use. Twenty experiments were then made with different sheets of dry plaster, the oil having a pressure of fifteen centimetres of mercury

It was now found, however, that, to obtain uniform results, the plaster must always be made with the same proportion of water; otherwise, when more water was used, the pores were rendered larger, and the oil came through more readily.

Experiments were made in the same manner, and in all cases in which the membrane was moistened with bile, when the oil began to come through, it appeared in very finely-divided particles, just visible by the microscope, giving in mass the appearance of a whitish cloud rising from the surface of the plaster.

On the other hand, when the membrane was moistened with water, the oil came through, forming a small globule, which gradually enlarged. Finally, when it had reached sufficient size for its specific gravity to free it from its adhesion to the plaster, it rose to the top of the water, which covered the membrane.

The inferences drawn are :—

1. That when a membrane is wet with bile, it allows oil to pass through more easily than when it is wet with water.

2. That, as the pores of the plaster cannot be supposed to change their shape, being made of a perfectly inelastic material, therefore bile cannot favour the passage of the oil by affecting any such change of form in the pores.

3. That, as the oil is more finely divided when it has passed through plaster moistened with bile than when it is wet with water, or used dry, therefore the bile must have some influence in affecting this.

Ludwig makes the following statements, which have some bearing on these facts: "The assistance which the bile renders to the passage of fat is best explained by this, that the obstruction which the pores oppose to the passage of fats is diminished.

"This (conclusion) can be reached in various ways; for example (a), by this, that the bile, pressed into the thin, mucous membrane, alters the form of the pores, and lessens the firmness of the tissues; or (b), that it makes the surface of the pores more slippery, so that the friction between the oil and the walls of the pores is lessened; or (c), that it makes the fat drops more capable of adapting themselves to the form of the porous canals, in that it diminishes the so-called drop-tension of the fats." The first of these explanations we have eliminated by the use of plaster as the membrane; the third seems likely, on account of the finely-divided appearance of the fat which comes through bile; and the second, although we have no proof of it, seems probable.

It may be said that, although the previous experiments show that oil goes through faster when the membrane is wet with bile than when it is moistened with water, yet that this does not prove that if some other liquid were used it would not go through faster still. Experiments were therefore performed to examine this point, and it was found that when the membrane is moistened with an alkaline fluid, fats go through quicker than with bile, water, or acid; and that the addition of alkali to the bile allows the fat to pass in the shortest time of all. In the small intestine we have two alkaline fluids poured out, the pancreatic and intestinal juices; these soon render the chyme, which comes down from above, alkaline. Now, if it is allowable to argue from results obtained from inorganic capillary tubes, what the action would be in organic pores, it would seem to follow, from the previous experiments :—

First, that, when the bile is mixed with the alkaline fluids of the intestine, its power of promoting fat absorption will be greatest.

Secondly, that if either the bile or the alkaline fluids be prevented from entering the intestine, still a certain amount of fat absorption will take place; for if the bile alone flows in, it will exert its specific influence in aiding the mechanical passage of the fats, and if the alkaline fluids only enter considerable fat will still penetrate the walls, aided by the alkalinity of the fluid, even if there were no other action. These suggestions seem to be sustained by previous experiments, for it has been found that, when all bile was cut off from the intestine, still some fat was absorbed; and, also, when a pancreatic fistula was made considerable fat was still found in the lacteals—more in amount in the last case, perhaps, because there was still the alkaline intestinal juice, which could not be cut off.

Thus it will be seen that this admirable prize essay embodies important experiments, tending to show by methods differing somewhat from those which have been tried before :—

1. That the passage of neutral fats through capillary canals or pores is favoured by the presence of bile in those pores.

2. That this action is increased when the bile is rendered alkaline, and diminished when it is acid.

3. That the action cannot be due to the bile changing the form of the pores.

4. That, after passing through membranes moistened with bile, the fats appear more finely divided than with membranes wet with other substances, apparently showing that the drop-tension or cohesion of the fat has been affected.

THE LIVER IN JAUNDICE.

Under this title Dr. Wickham Legg has reprinted (H. K. Lewis) a useful article setting forth concisely a number of the most recent contributions—chiefly from German sources—to our knowledge of the morbid anatomy of the liver in permanent obstruction of the bile ducts. He considers the morbid appearances under two heads—1, the changes met with in the bile passages; 2, those met with in the parenchyma of the liver. The pamphlet may be advantageously read in connection with what has preceded.

MOVEMENT OF THE BILE.

At a meeting of the Russian Association for the Advancement of Natural Science, lately held at Kasan, Professor Kowalewsky read a paper "On the Mechanics of the Movement of the Bile." His experiments were directed to determine the relation between the forces by which the bile is urged onwards, and the obstacles it experiences in its passage towards the intestinal canal. A manometer was inserted into the ductus communis choledochus of cats that had been previously subjected to the action of curara, and it was found that the motor power driving the bile is not constant or uniform in amount, either in different animals or in the same animal at different times. The pressure varies in curarized cats between 12 and 20 mm. of mercury when the duct has been lightly ligatured. Under ordinary circumstances the obstacle to the discharge of bile into the intestine varies from 3·4 to 7·5 mm. in the cat. These variations depend on changes in the pressure of the blood in the large arteries, so that when the pressure rises in the latter it is increased also in the biliary ducts. A certain space of time intervenes between the two events, and the rise of pressure in the duct is not, therefore, the immediate consequence of the former, but is due to an alteration in the activity with which the secretion is formed, or upon its reabsorption from the biliary ducts. Under ordinary circumstances, as soon as the pressure rises to a height of from 3·4 to 7·5 mm. the bile must begin to enter the intestine drop by drop; and some explanation may thus be afforded of the remarkable differences that exist between the fresh bile of an animal and that which is obtained from its gall-bladder, for the latter may, during fasting, in which state the gall-bladder often becomes fully distended, have been long stored up, and may have undergone considerable alteration. Dr. Bogoljubow, who has examined the gases of the bile, has observed that whilst freshly-secreted bile may contain as much as 64 per cent. of combined and 7 per cent of free carbonic acid, the bile contained in the gall-bladder of fasting animals may not contain more than 2 per cent. of the combined gas and 2 per cent of the free.

DISEASE IN OUR BOOTS AND SHOES.

SIR JAMES PAGET occasionally gives a clinical lecture at St. Bartholomew's Hospital. On the 1st June he gave one on "Maladies Produced by Boots and Shoes," which is very well reported in the *Students' Journal*, and which possesses so much interest that we transcribe the teaching of Sir J. Paget on this important but neglected subject.

Maladies depending on the wearing of too small and badly-fitting boots are very numerous, such as deformities of the toes, bunions, corns, in-growing nails, painful bursæ, &c. In order to study deformities of the toes, said Sir James, you should obtain a good idea of a perfect foot. In a perfect female foot you find:—

1. Great width and fulness of instep.
2. Well-marked great toe.
3. Long second toe, projecting a little beyond great toe.
4. Very small, or in some cases almost suppressed, little toe.

In the male the great toe is not quite so prominent as the second. The feet of all persons cannot be deformed, nor can corns and bunions be produced in every one. It is doubtless owing to their complete reactive nutrition, the repair that takes place in the night being more than enough for the day's waste. This is not impossible when it is remembered the complete repair that occurs after great muscular waste, as in athletes. The troubles then set up in the integuments, fasciæ, and tendons of the toes are rather to be regarded as diseases set up by the pressure and friction of boots.

I.—*Mutual Compression of the Toes.*—Naturally there is a considerable interval between the first and second toes, and in a less degree between the others, so that when the foot bears the weight of the body, each toe is free from contact with its fellow; hence, in wet clay you would receive a separate impression of each. In the deformity, though, which is produced by small boots, the toes are squeezed together, so as to form a transverse arch, the first and second toes then only bearing the weight of the body. Thus, there are formed:—

1. Soft corns between the toes by their friction on each other.
2. Hard corns on outer side of little toe and inner side of great toe, and projecting points pressed upon.
3. Complete immobility of the toes, except the great one. The natural mobility in civilised nations does not exist now in more than about one person in 500.
4. Painful bursæ between metatarsal bones.
5. In extreme cases corns and chafed spots are produced by the squeezing and rubbing together of the pads of the great and little toes.

Kid gloves, though worn continually, never cause bunions, since the kid stretches to the hands; but in the manufacture of boots, especially ladies' boots, unyielding canvas is used to line them, so that the leather is prevented from stretching and showing the true shape and size of the foot. The foot enlarges when bearing the weight of the body, and also towards evening; hence a boot thus made from a measure taken when the foot is suspended in the air, and in the morning, is too small for the foot in the evening. Women's feet are generally measured in the air, but men's when they are standing on them. The high heels in ladies' boots, too, will be always causing them to walk down-hill, however level the path may be, thus driving the foot more and more to the front. In a well-made English boot this is prevented to some extent.

II.—*Deflexion of the Toes* falls chiefly on the *great toe*, the result of wearing—

1. Boots too narrow in front.
2. Boots (now out of fashion) having the point in a line with the centre of the heel; the big toe, which naturally is in a line with the inner side of the heel being deflected outwards towards the point.
3. Short boots especially. In them the great toe is brought sharply in contact with the end, and as the tarsus and metatarsus will not yield much, and the metatarso-phalangeal joint will, a deflexion of the great toe takes place outwards, and sometimes downwards. This is the most frequent and worst form. This deflexion of the great toe is the source of great trouble, as bunions occur over the metatarso-phalangeal joint, soft corns on the second, third, and fourth toes, under which it lies, and, worst of all, a total loss of movement in the great toe.

Treatment of the above Deformities.—If just beginning, keep the toes apart by pads of plaster. Isinglass plaster upon felt is the best. The pad must be worn day and night. Of course, bad boots must be left off. The treatment by night is even more important than that during the day, for then especially repair goes on, and the least relaxation in the night more than undoes the good done in the day. Sometimes it has been considered necessary to divide tendons, but these do not produce the deformity; they merely adapt themselves to it. If they are divided, the deep-seated fibrous textures should be divided as well. In the worst cases the great toe has to be amputated.

Deformities of the Second Toe.—It is doubtful whether these deformities are due to the wearing of bad boots, as sometimes they are hereditary. There are two kinds:—

1. The last phalanx may be turned straight downwards, and is then called the hammer toe. It is found occasionally in the other toes.
2. Extreme flexion of the first phalangeal joint. It is certainly hereditary, for it is frequently

found in children who have never worn boots, but it is greatly aggravated by wearing boots, since corns form on projecting parts.

In the old classic statues the second toe projects beyond the first, but that natural type of foot is going out. The great toe seems now to project beyond the second. In people with flat feet this is always the case. Some say that the deformities of the second toe are congenital, but it is probably an early produced disease of the fibrous textures.

Treatment.—If beginning in a child, you may cure it by applying a wooden splint below, and keeping it bandaged night and day. When deformity is more advanced, divide the flexor tendons, and apply a splint below, or a splint on the dorsum of the foot arranged with loops. In later life it is impossible to cure the deformity; but amputation should be done at the point of extreme flexion, not at the metatarsal joint.

The third and fourth toes have no special deformities. They only suffer by being lifted up or pushed down.

The little toe sometimes is almost suppressed from atrophy resulting from pressure.

Boots then may, besides other diseases, cause deformities which lead to the hardening and contraction of the fibrous structures around the joints.

THE LOCAL TREATMENT OF PULMONARY CAVITIES BY INJECTIONS THROUGH THE CHEST-WALLS.

We have already reported the proposal of Dr. Mosler to inject fluids into pulmonary cavities in phthisis. He has practised the operation, and in one case left a drainage tube in the opening four months. Just about the same time Dr. Wm. Pepper, of Philadelphia, injected cavities in the lungs with solution of iodine (♏iv. to ℥j.) by means of the aspirator. Clearly there is a difference between the use of the aspirator to empty the cavities of secretion and then inject iodine, and the use of a drainage tube; but Dr. Pepper had actually said he would not object to the latter proceeding, and considering how often there is free communication between vomicæ and the air, the difference is not so great after all. Be that as it may, we shall be spared a debate as to priority, for the plan is, after all, very old. We had intended to show how often it has been proposed; but while looking up references for the purpose, we have received the *Philadelphia Medical Times* for May 30, in which this point is skilfully treated by Dr. James H. Hutchinson, of the Pennsylvania Hospital. From Dr. Hutchinson's precise criticism we accordingly take the following:—

In the London translation of Baglivi's "Practice of Physick," published in 1723, we find the following passage, which we quote just as it is printed:—

> "A Phthisick arising from an Ulcer is commonly branded as incurable, upon the Plea that the Ulcer is internal and occult, and cannot be cleansed like other external Ulcers. But why do they not make it their Business to find out the true Situation of the Ulcer, and make an Incision accordingly, between the Ribs, to the end that proper Remedies may be conveyed to it? For my Part, I know no Reason why that should lie neglected. About Seven Years ago, when I was at Padua, a Man received a Wound in the Right side of his Breast, that reached to his Lungs; and, employing an able Surgeon, had an incision made between the Ribs to the Length of Six Fingers' breadth, in order to discover the Situation of the Wound in the Lungs, which was perfectly cured in Two Months' Time, with Vulneraries, applied with Tents and with Syringing. Now, Practitioners ought to use the same Piece of Diligence in curing a Phthisical Ulcer in the Lungs, lest the Scroll of incurable Disease should grow too long, to the infinite Disgrace of the Profession."

As Baglivi's work was published in 1696, we have sufficient evidence in the above that the propriety of establishing a communication between the lungs and the outer air through the walls of the chest, for the purpose of applying remedies directly to the seat of the disease in cases of phthisis, was entertained as early as the seventeenth century. We shall show in the following quotation from a work published in London in 1763, by Dr. Edward Barry, F.R.S., entitled "A Treatise on Three Different Digestions," that the operation was recommended by Hippocrates, and that it was not infrequently done during the eighteenth century:—

> "When evident marks," Dr. Barry says, "appear in the Sides, all Authors, ancient and Modern, agree, that an Aperture should be made; and Books of Observation abound with Instances of this kind, where it has been performed with Success. *Hippocrates* constantly directs it either with the *Knife* or actual *Cautery*, not only where the *external Appearances* are evident, but where they are very *obscure*: and seldom seems to doubt of Success, but in very advanced Cases, where the Fluids in general and the purulent Matter collected are degenerated into a putrid eroding State, and where, though a free Discharge is given, yet the Ulcer can never heal. It appears from the Dissection of those who have died of this Distemper, that such Abscesses or Ulcers in the Lungs generally adhere by a large Surface to the Pleura. . . . By this Adhesion of the Lungs to the Pleura, the Parts affected are kept (as if carefully designated by Nature) in a great Measure in a State of Rest and easily admit an Opening into the Cavity; neither if the Operation fails can it be attended with any great Danger, or much accelerate the Progress of the Distemper."

Passing to the present century, we find that substantially the same method of treatment has not only been proposed, but actually carried into effect many times during the last fifty years. Ramadge reports several cases in his treatise entitled "Consumption Curable" (London, 1836). In one of these he introduced a trocar between the second and third ribs, in a line nearly perpendicular to the left nipple. "I kept," he writes, "the punctured place open for about ten days by the introduction of a small piece of catgut properly secured externally, when, finding that the cavity became so contracted through the encroachment made on it by the pulmonary expansion as to preclude all further escape of air, I withdrew it." Dr. Hastings and Mr. Stork have also reported one case in which a silver tube was first introduced, and, not answering, an elastic gum catheter was substituted for it; and a Mr. Robinson another. The publication of the former led to some little controversy as to the propriety of the operation, Drs. Herbert and Campbell maintaining that no good results could be expected from it. We have also abundant proof that the chest-walls may not only not cause immediate death, but may occasionally lead to an apparent arrest of the disease. Thus, as a consequence of the application of the actual cautery to the chest in a case reported by M. Bricheteau, a pulmonary cavity was opened and emptied of its contents. Fifteen months later the patient succumbed to an attack of pericarditis, when the cavity was found partially obliterated. In Canstatt's "Jahresbericht" for 1843, vol. iii., p. 365, will be found a reference to the *Medical Times*, Nos. 60, 171, and 180, in which a writer under the signature of "Discipulus" reports two cases of phthisis, in one of which a cure is said to have been the result of a self-inflicted wound of the neck by a would-be suicide, and in the other followed the spontaneous evacuation of a vomica through the parietes of the chest. . . .

"In conclusion, we have only to add that we never condemn a plan of treatment on purely theoretical grounds, and will gladly adopt the one under consideration if the result of further experiments shall convince us of the incorrectness of the unfavourable opinion we have formed of it. In the mean time, however, we shall remain in full accord with Dr. Hughes Bennett, who thinks that the result of all operative interference in phthisis has been 'what an intelligent consideration of the pathology of the disease might have anticipated—a uniform failure.'"

ALCOHOL AS A DIGESTIVE.

IN a paper read before the Southampton Medical Society, and reported in the *Lancet*, May 30, "On Some Points in the Dietetic Treatment of Disease," Professor Parkes, F.R.S., relates some new experiments he has made in order to answer the question What is the influence of alcohol on appetite and digestion ?

Believing it to be generally admitted that in large doses alcohol lessens, and at length destroys, appetite, Dr. Parkes thought it very desirable to know if this is the case, and, if so, what is the quantity which will thus act in healthy men. Here are his experiments to determine the question :

"A healthy man took, on successive days, one, two, and four fluid ounces of absolute alcohol in divided doses with water and food. The first two quantities did not lessen appetite, but, according to the man's statement, increased it. Four fluid ounces, however, greatly lessened appetite ; and on increasing the quantity to six and eight fluid ounces appetite was entirely destroyed, and the man could eat nothing. These experiments showed that in this healthy man something between two and four fluid ounces of alcohol in twenty-four hours lessened appetite.

"Another man took, on successive days, in one dose and before food, one, two, four, six, and then again six fluid ounces of undiluted brandy, containing about 50 per cent. of absolute alcohol. The one and two fluid ounces of brandy (equal to half an ounce and one ounce of absolute alcohol) had no perceptible effect on appetite one way or other ; four ounces of brandy (equal to two fluid ounces of absolute alcohol) greatly lessened it ; and six ounces of brandy (equal to three ounces of alcohol) destroyed it, so that the man could not force himself to eat all his food, though strongly urged and indeed anxious to do so. In this case the brandy was given three hours after breakfast and three before dinner.

"To another healthy man six ounces of undiluted brandy were given in three days, three hours before food ; and on three alternate days he took no brandy. The brandy contained 36 per cent. of alcohol by volume, and therefore the six fluid ounces contained a little over two fluid ounces of absolute alcohol. In this experiment the man was kept without food every day from 6 p.m. until 1 p.m. the next day, or for nineteen hours ; he took the brandy therefore after sixteen hours' fasting. On the days when he took no brandy his appetite was excellent. On the brandy days, although he felt excessively hungry before he took the brandy, he lost all sensation of hunger soon after it : in spite of urging he could not take all his food even after this long fast.

"It seems, then, that alcoholic beverages containing about two fluid ounces of alcohol produced marked lessening of appetite in both those men who took the brandy on an empty stomach ; and in the first man, who took the alcohol with food, something more than two ounces was required to produce this effect.

"In a fourth healthy man twelve ounces of brandy taken in divided doses during the day, and chiefly with food, did not affect appetite, but the man informed me that he was himself well aware that a large quantity would do so, as he had often made the experiment on himself."

These experiments were made on men whose digestion was perfect and who were quite healthy. In no case were the men prompted, nor did they know whether it was expected that the appetite would be increased or lessened. Three of them thought the appetite would be increased ; the fourth knew, from previous experience, that spirit-drinking largely destroyed appetite. Dr. Parkes concludes that anything over two fluid ounces of alcohol may lessen appetite if the stomach be empty, and therefore necessarily injures digestion.

Our readers should observe that in all these cases the brandy was given *undiluted*. We confess we felt surprised, and even disappointed, at this. As a digestive we should never dream of giving brandy neat, and thousands will be ready to assert that taking weak alcoholic beverages is a very different thing from dram-drinking.

Dr. Parkes has seen some patients who were having large quantities of alcohol and who complained that they could eat nothing, and on lessening or taking away alcohol the appetite has returned. In such cases he concludes that alcohol was acting hurtfully. But there are other cases in which men have taken considerable quantities of spirits and yet could eat well. Perhaps the time when the spirit is taken may make the difference. In healthy men the greatest injurious effect on appetite was produced when the alcohol was taken on an empty stomach, and the least when it was taken with food. We should say, too, that *undiluted* brandy on an *empty* stomach was the worst way of taking alcohol.

If alcohol in large quantities lessens, and eventually destroys, appetite, do small quantities increase it ?

Dr. Parkes tells us that the man whose appetite was nearly destroyed by four fluid ounces of alcohol thought that one and two ounces increased his appetite. The man whose appetite was destroyed by four fluid ounces of brandy did not think that one and two ounces had any effect either way. He was, indeed, disappointed with the effect of one ounce of brandy, as, after abstinence for many days, he had been looking anxiously for it, and thought he should enjoy his dinner more. In this case, then, half an ounce of pure alcohol had no effect ; and, subsequently, one ounce of pure alcohol was not more potent in increasing appetite in this man. In the man whose appetite was not lessened by twelve ounces of brandy given in divided doses, there was no increase. In the fourth man the brandy was given in too large doses to test this point.

The evidence from these three healthy men as to any increase of appetite and more vigorous digestion from small doses of alcohol is therefore uncertain, and it is more negative than positive.

Here, again, we would ask, if *neat* brandy on an *empty* stomach destroys appetite, what is the effect of *diluted* alcohol *with the food?* We submit that the question is a very different one.

Both healthy men and patients have told Dr. Parkes, as they have most of our readers, that appetite has been really increased by taking spirits, wine, or beer in small quantities with food.

Dr. Parkes mentions the case of a relative of his own, a man of singularly good judgment and honest mind, who was a total abstainer for many years. When he was between fifty and sixty years of age he got out of health; his digestion became feeble, he ate less, and began to get thinner. He was advised to take one-half to one pint of beer with dinner. He did so unwillingly, but found to his surprise that he ate more, digested better, and soon recovered all his lost ground. He has continued taking beer once a day and occasionally one or two glasses of wine ever since. He is now seventy years of age, very healthy, and has no doubt that he has been greatly benefited by this alteration in diet.

Then Dr. Parkes gives publicity to the case of Dr. Carpenter, "who has done more than any man living perhaps to advocate temperance." In his writings on this subject, Dr. Carpenter has always maintained that the action of alcohol on the human body when under par is different from its action on an individual in full health, and is beneficial in many cases with depressed digestive power. He has given Dr. Parkes an account of his case for publication, and this is it: "After having been a water-drinker during all the earlier part of my life, and enjoying a fair measure of health and vigour, I broke down about ten years ago under the pressure of excessive work, and, besides a local disorder, I then suffered from a total loss of appetite and enfeeblement of the digestive power, so that my whole system was undergoing a rapid lowering. My medical friends recommended me powerful tonics, combined with three glasses of sherry daily, and on this regimen I improved even more rapidly than they expected, and was able in a month's time to enjoy a tolerable dinner, gradually reducing the quantity of wine I took with it. They had at first expected that I should be obliged to winter in the south of Europe; but I rallied so fast that this idea was soon abandoned, and I was able to return to my work after a three months' absence. Ever since that time I have taken a couple of glasses of light claret with my dinner, and this fluid suits me very well. I often reach home very tired, and feeling as if I could eat nothing, and I am certain that without this little 'fillip' I should eat nothing. The question lies, therefore, in such cases between the use of the slight alcoholic stimulus and the inadequate nutrition of the body, and I cannot myself doubt which is the *least* of what I am willing to admit to be *two evils.*"

Upon this Dr. Parkes says: "Coming from such a man, this evidence seems to me indisputable, and, coupled with that derived from watching patients with weak digestions, I think may be called conclusive."

Then come the questions, What amount of alcohol increases appetite, when should it be given, and in what form?

With regard to the *amount*, judging from his experience on healthy men and on patients, Dr. Parkes says the quantity which should be given for this particular purpose of increasing appetite should not exceed one fluid ounce of absolute alcohol in a day, and half an ounce is often enough. If this does not improve appetite, a larger quantity will not do so. We should decidedly advise that whatever be taken be *diluted;* but hear Professor Parkes:—

"I am quite sure we cannot force appetite by increasing the amount of alcohol, but, on the contrary, shall run the risk of lessening it. Alcohol has sometimes to be given in large quantities to urge on a failing heart or to blunt sensation; but this is another thing. In such cases a paramount necessity compels us to disregard the question of appetite. But when, as in most cases, our object is to get more nourishment into the body, then we should keep, I believe, to small doses, and if the medicine fails, try something else. I must add to this, however, by affirming what I am quite sure of by observation, that there are persons whose appetites and digestions are injured by even small quantities of alcohol, and who digest much more and eat much more when water only is taken. The healthy digestion of children is, I think, always injured."

As to the *time* when it should be given, Dr. Parkes has no doubt it must be with food. The reason of this he thinks clear. The alcohol is mixed with the contents of the stomach, acts, therefore, in a very diluted form upon the mucous membrane, and is absorbed slowly. We may, therefore, safely infer that the excessive redness and dilatation of vessels, which a tolerably strong alcoholic solution causes in living tissues, is avoided; there is probably a moderate paralysis of the vaso-motor nerves and a more rapid circulation and pouring out of gastric juice. But give it without food or in such large quantities even with food as to impart to the fluids bathing the delicate cells and tubes of the stomach a more concentrated alcoholic composition, and we can believe that the albuminous tissues are damaged and the nerves and vessels are probably paralysed to an extent which interferes with the formation and pouring out of the gastric juice. "If this be so," says Dr. Parkes, "and I believe the facts indicate it, what madness it is for men to be drinking at all times of the day, especially spirits and strong wines, which must inevitably ruin in the long run the surfaces they bathe and the tissues they pass through in a comparatively concentrated state."

With regard to the *form* in which alcohol is given to promote appetite, if a fattening effect is also desired, and no gouty tendencies exist, beer containing a good deal of malt extract is pronounced the most suitable; if salines and acids seem to be desirable for the kidneys, then the light French wines seem a good form, though many persons of weak digestion are unable to tolerate the quantity of acid and acid salts most of these wines contain. In certain cases the stronger astringent wines may evidently be best, and in all cases, no doubt, a natural wine, as little doctored as possible, and free from the chance of other alcohols or of fusil oils, should be ensured. Purity, alcoholic strength, and the amount of free acidity, salts, and extracts, are considered the most important points to guide us in prescriptions, for the ethers are in two small a quantity to have much effect on digestion, though the aroma and bouquet they aid in giving may be pleasant.

Though there is much to be said for this view, we think there is something on the other side. Not a word is said about sugar, and yet Dr. Parkes must well know the part it is believed to play, while in spite of the dictum about the ethers, no one can deny that a fine, old, dry wine is not a mere mixture of spirit, water, and flavouring.

For many patients, when the effect of alcohol on digestion only is sought, the plan recommended by Wilks, to give rectified spirit, properly disguised, as a medicine, is supported by Professor Parkes, as we shall then be certain of purity, that proper quantities are given, and at the time we desire, that no discretion is left to nurses or friends, and that the chances of a bad habit being formed are less. He might have added that then perhaps the nurses would not drink it, as we fear they sometimes do in workhouses and other institutions.

THE CEREBRAL POWER IN MAN.

An account of the last of the Toner Lectures, delivered by Dr. Brown-Séquard, appears in the last number to hand of the *Medical and Surgical Reporter*. His subject was "The Cerebral Power in Man," and he commenced by saying that his views, he hoped, being somewhat novel, would command attention. The facts he would dwell upon were new, probably would not be generally accepted, and perhaps would not be easily understood by those not familiar with medicine.

He then asked, have we two brains? and if so, why not educate both? The views of science upon this subject were different from his. The left side of the body was the side affording volition to the brain, and, *vice versâ*, the right side of the brain afforded volition to the body. Eminent authorities had declared that either side of the brain was competent for this purpose.

But we use only one side, and, therefore, leave out of account one-half of brain matter. We owe due education to both sides of the brain, or rather, to the two brains.

As to intelligence, the eminent authorities he had cited established the fact that either side of the brain was competent for full development of the faculties. There were many persons of two minds, because they were never able to make up their minds. Some men claimed to be rational while they were insane. There were many cases that show clearly that there were two brains. He had known a boy in London that manifestly had two brains, whose peculiarities he described. He would fall into a comatose state, suddenly open his eyes brightly, inquiring of his mother why he was not introduced to the gentleman who was present while he was asleep. Again, the lecturer saw him when the boy recognised him. He had two mental lives. He knew nothing of what occurred in his sleeping condition, when fully awake; and when in the latter condition he knew what had occurred in the former. The lecturer had seen three cases of this kind.

As regards faculty of speech, the fact that we had two brains was not so easily proved. The loss of the faculty of expression depends upon disease of the left side of the brain; and this proves that the right side is distinct.

As regards sight, a theory has been put forth by a celebrated physician of London, that the right side of the base of the brain is the centre of sight. The inner half of the right eye and the outer half of the left eye have the base of the brain as the centre. A disease in the left side of the brain, where the optic nerve touches, would therefore affect only one-half of the brain. Notable cases were given in which parties had seen but one-half of certain objects that they gazed upon. If the disease exists only in the left side of the base of the brain, only one-half of the eye will be affected. So there are many cases that go to sustain the philosophers. But we do not accept conclusions unless theory is thoroughly supported.

There were three series of facts, but one would be enough to show that the theory should be rejected. Disease of the brain, where the optic nerve touches, would not be sufficient to cause loss of sight. One side of the brain would be sufficient to sustain sight. An alteration in any portion of the nervous system, acting upon other parts, can produce disease in that part. Injury to the spinal cord would produce loss of sight on either side. There was nothing more common than the loss of sight temporarily in children who suffered from worms in the stomach. Any injury in one-half of the brain can exist without producing loss of sight. Either half of the brain may, therefore, serve to sustain sight.

As to the voluntary movements, these depended upon the action of the body. Yet there were many small muscles which were not affected in cases of paralysis. There were cases on record in which it was shown that the lower lobe of the brain could be destroyed without affecting these voluntary movements. There were several such cases. We must, therefore, look on one-half of the brain as being sufficient to sustain voluntary movements on both sides of the body. An irritation in any part of the brain may affect any part of the body, and an irritation in any part of the body can produce paralysis in another part. The irritation could also act upon remote parts. This shows that the power of will does not control the entire action of the body. When paralysis occurs it depends upon irritation.

The same reasoning applies to sensation. There were thousands of cases affecting the brain that did not affect the feeling. Passing these facts in review we find vast differences owing to the fact that one-half of the brain was developed for certain things and the other half for other things. To the left side of the brain belonged the faculty of expressing ourselves by speech. Articulation depended in great measure upon the left side of the brain. Difficulties in the mechanical point of speech were more frequently found when the left side of the brain was diseased. It was the mental part that was lost, and not the mere mechanical action. The left side of the brain was also the motive power of gesture. When the left side was diseased, patients lost the power of gesticulation.

As regards writing, it was lost more frequently in diseases of the left side of the brain. The right arm was paralysed by diseases of this side. Many thus diseased could not write from memory, although they could use their fingers and copy. In those cases it sometimes occurs that persons could not write at all.

Intelligence depends more upon the healthfulness of the left side than of the right side of the brain. The right side of the brain in some cases has the power of the left, if properly developed. This serves to hysterical developments and to nutrition of the body. One, the left, applies to the mental; the other, to the natural life.

The right side of the brain operates upon the limbs in cases of paralysis and other diseases; also upon the disturbances in the lungs, liver, and other parts. Hysterical and emotional symptoms are more common in cases of disease of the right side of the brain; out of 120 cases of paralysis that came under the lecturer's observation there were 96 caused by disease of the right side. An alteration of the retina of the eye will come more frequently from diseases of this side of the brain. Out of 69 cases of convulsions of the eye, 47 were due to disease of the right side. Death occurs much more frequently by disease of the right side of the brain, and in cases where patients do not die it will produce more extensive and enduring paralysis.

All this shows, not that the two sides of the brain differed originally, but that there were different developments of each. The left side of the brain was much larger than the right side. If a person went frequently to the same hatter, he would find that his hat had from time to time to be enlarged. There was no question that the brain grew. By studying a particular subject the person became more proficient, and the brain was more fully developed.

There was no doubt that the left side of the brain predominated in our system. Our being right-handed showed it. There was no population in the world that was not right-handed. The right hand of the body was mostly used. Left-handed individuals used the right side of the brain, showing the connection between these things.

There was primitively a difference between the two brains. In children, convulsions were sooner developed in the left than in the right side of the brain. This was attributable to excess of blood in the left side. Parrots roosted on the right legs, and their talking power came from the left side of the head.

There were four vital points to be considered. The first was that asphyxia was connected with the left side of the brain in persons that were right-handed, and with the right side in those that were left-handed. The second point was that children who were first learning to talk, if disease came in the left side of the brain, learned to talk just as well with the right side of the brain. Though losing half of the brain, they got along just as well.

This proved that the right side could be educated, with the left hand for execution. The third point was, that four out of every hundred left-handed persons learned to write with the left-hand ; therefore the left side of the brain, even with persons left-handed, could be educated better than the right side. The fourth point was that the leg was rarely so much affected by paralysis as the arm. He, however, would pass over this argument, as it could only be understood by medical men.

If the lecturer had established that we had two brains, then they should be developed. If we could develope the legs and the arms of both sides we could develope both sides of the brain. If we gave as much attention to the left side of the body as we do to the right side, we would fully develope our two brains. The important point, therefore, would be to make children use both sides of the body—alternately using the right and left arm and the right and left leg equally. There would be no difficulty in thus training children to full development.

Even adults who had lost speech by disease of the left side of the brain could regain the power by cultivating the right side. In gesture, persons who had lost the use of the right arm could be trained to use the left. If children were thus trained, we would have a sturdier and healthier race, both mentally and physically.

SPECIAL DEPARTMENT.

REPORTS ON LIFE ASSURANCE.

IV.

EFFECT OF INDIAN CLIMATE.

Some time ago a controversy was raised by the proposal of a Life Office to assure European lives in India at the ordinary rates Of course every policy-holder is interested in the stability of his office even more than in the mere rates of premiums.

Some new light ought to be shed on the subject by the experience of the Uncovenanted Service Family Pension Fund, of which the 36th Report has appeared. The statistics have been examined by Mr. G. W. Kellner, who, in a speech at the last meeting of subscribers, said :—

"The present rates of subscription were based upon tables of mortality constructed in 1858. Compared with those tables the actual mortality experienced by the subscribers from the year 1837 to the year 1872 was as follows :—

Mean age.	No. of deaths per 1000, assumed in tables of 1858.	Actual number of deaths per 1000 from 1837 to 1872.
25	20	7
30	20	10
35	22	18
40	30	20
45	36	29
50	40	34
55	46	46
60	59	60

"The mortality that had actually occurred at the younger ages is thus shown to be less than that assumed in the tables of 1858, and it is at those ages that subscribers are present in large numbers, happily constituting the backbone of the Fund. Again, the actual experience shows that the mortality of the wives below the age of 35 is greater than that of the husbands, and both were placed on an equality in the tables of 1858. These facts pointed to a possible reduction in the present contract subscription for wives. But the older ladies (both nominees and incumbents) from 45 to 60 years of age have exhibited a vitality with which they were not credited in the computed tables, whilst the actual rate of remarriage was less than the computed rates.

"In respect of the Orphans' Fund, the actual experience showed that the mortality of female children was less than the rate assumed in the tables ; but this was compensated by the less mortality of the fathers to which allusion had already been made. It was also found that the actual rate of marriage of daughters was less than the rate assumed in the tables. The premia for sons were probably more than sufficient to cover the risks.

"On the whole, so far as the investigation had proceeded, the existing rates of premia were found to be safe, and capable of readjustment in accordance with the experience of the Fund. The actual rate of mortality was, no doubt, lower than the computed rate, but considerably higher than the rate of mortality in England ; and it was important that this fact should be widely known, in reference to the controversy now going on respecting the relative value of European life in Europe and in India. The Uncovenanted Servants of Government were required to produce certificates of sound health as an indispensable condition of membership in the Pension Fund; yet the actual mortality amongst these members, during a period of nearly forty years, was found to be nearly double the rate of mortality experienced by Life Assurance Companies in the United Kingdom."

EFFECT OF SYPHILIS ON THE DURATION OF LIFE.

Not a few examiners have had to weigh carefully the effect of syphilis on the risks they considered. We have before us a small pamphlet, apparently reprinted from an American journal, in which Dr. Fred. R. Sturgis, of New York, considers the whole question. Collating the statistics of various hospitals and cities in Europe and America, he finds the mortality from this disease does not exceed 2 per cent., and that it is chiefly in the lower classes who neglect themselves, and who do not become candidates for assurance. Among the upper classes Dr. Sturgis thinks the mortality could not exceed 1 per cent.

The paper concludes with a few rules as to when to recommend and when to reject syphilitic risks, which we give, somewhat abridged :—

"1. It is better not to insure any patient in whom the disease is still present, no matter how light the symptoms may be, for you cannot predict accurately what may occur.

"2. This, however, does not argue that the same man may not, after he has recovered from his disease, be a good risk. The average time allowed for recovery is two years ; of course some will need more, some less. Then allow two more years from his last symptoms before becoming a candidate for life assurance ; in other words, four years from the date of his disease. This will answer for the majority of cases of medium severity ; where the patient's history points to an advanced stage, let three years have elapsed from his last symptoms until his examination.

"3. Be especially careful to ask the date of the last symptoms and their character, for the older the date, and the lighter and more superficial the symptoms, the less the risk.

"4. Persons with a family history of tuberculosis, cancer, and such hereditary diseases, are, at the best, considered shy cases. They are doubly so when they have had syphilis of an advanced type, *e.g.*, nervous, visceral, or ulcerating syphilis. If their disease has been mild, with the two years' period of recovery above mentioned, *the syphilis* need not stand as a bar to their insurance.

"5. Not so, however, those who are the subjects of hereditary syphilis. They are rotten 'ab ovo usque ad mala,' and if not actually presenting the symptoms of their congenital disease, their vitality is impaired, their nutrition often imperfect, and they are prone to succumb to almost any extra strain which may be imposed upon them.

"6. Inasmuch as patients are proverbially prone to deceive the examiner under such circumstances, not from wilfulness only, but from ignorance also, obtain, so far as you can, a certificate from the physician under whose care they were for the disease."

LIFE ASSURANCE MADE EASY.

This is the title of a little book by Mr. F. A. C. Hare, F.S.S., A.I.A., which has in a short time run to a second edition, and well deserves the success, for it really comes up to its title. The author explains by simple arithmetical demonstration the calculation of rates and other problems that so often puzzle those who have not looked into the subject of assurance. As some of our readers may be desirous of possessing a handy compendium of life assurance, we bring before them this little work, which will give them all the information which they may need to enable them to cope with agents, or to form their own estimate of many statements they may be desirous of testing.

ABOUT BOOKS.

Traité Complet de la Rage chez le Chien et chez le Chat: moyen de s'en préserver. Par M. J. BOURREL, ex-Vetrinaire de l'Armée, &c. Paris: Georges Barba. 1874.

IN looking over the columns of our favourite morning journal we cannot fail to be struck from time to time with the unfortunate frequency of cases of hydrophobia, and, as members of the medical profession, we must lament the total inadequacy of the means at our disposal to combat this truly dreadful malady.

Legislation has been called into action in Great Britain, as well as in France, to lessen the dangers which the public encounter from rabid dogs, and in both countries it has equally failed to accomplish the end in view, partially from the laws not being carried out and in part from their not being comprehensive enough.

This being so, M. Bourrel's elaborate work on "Rabies in the Dog and Cat," will be welcomed by the members of our profession, and by all lovers of their species, as a valuable and interesting contribution to the literature of a very important, but much misunderstood subject.

Our author, placed as he is at the head of the *Etablissement Spécial pour l'Etude des Maladies des Chiens*, has been very favourably situated for the study of rabies in its various forms, and he tells us that during the last twelve years he has had under his personal observation upwards of 1,200 dogs suffering from that direful malady.

The symptoms which are usually laid down by writers on the subject as those of rabies are only seen in a small section of the animals affected by the disease, and accordingly M. Bourrel proceeds to classify the cases under three heads, viz.:—

a. The most numerous class, which neither bark nor bite.

b. Those which bark little and bite seldom.

c. The furious and smallest class, containing those which bite frequently and have a peculiar bark.

It is with mad dogs as it is with mad men, the symptoms differ in the various cases according to the special character of the animal attacked.

Certain writers on rabies have believed and taught that the virus may be, and frequently is spontaneously generated in the dog. Tardieu, Fleming, Lafosse, and the other upholders of this doctrine find in M. Bourrel an opponent who successfully meets their arguments and shows the utter untenability of their theories.

Believing as our author does that the virus of rabies is like the virus of syphilis, in that it requires to be introduced into the system of an animal by some other affected with the disease, before the first mentioned animal can become rabid, and as it is always by means of the teeth that this inoculation takes place, M. Bourrel proposes a very novel plan for the prevention of the spread of rabies, and consequently for the blotting out of hydrophobia from our list of diseases.

M. Bourrel believes that he has proved experimentally that if the crowns of the incisor and canine teeth of a dog be filed flat, it will be impossible for that dog to introduce the poison into the system of any other animal; this operation does not last more than from three to five minutes; is totally devoid of pain; but the dog can now only inflict a bruise, where before the operation he would have been able to produce a lacerated wound.

The advantages which the author claims for this ingenious plan are—first, its simplicity, since any one who can use a file can perform the operation; second, it will protect the public from hydrophobia; third, it does not in any way interfere with the health, comfort, or appearance of the animal.

It would take up too much time to detail here the experiments of the author, but we may mention that he has allowed rabid dogs which have been operated on to bite other dogs, and even his own hand protected, by a glove, without in any case their being able to introduce the virus.

A very good illustration showing the means and method of operation brings this interesting and important work to a close.

J. M. JOHNSTON SCOTT, M.D.

Five Years' Surgical Work in the Manchester Royal Infirmary. By EDWARD LUND, F.R.C.S. Manchester: J. E. Cornish. 1874.

MR. LUND'S *brochure* is reprinted from the "Liverpool and Manchester Medical and Surgical Reports for 1874," and illustrates in a practical manner the advantages to be gained by attention and care in noting the surgical cases admitted into hospital. We are glad to see that the author recognises the value of "spirit lotion" in the treatment of contusions and bruises; we also hold with him that it is to the spirit contained in tincture of arnica that the good results are to be attributed, and are glad to note that he has discarded altogether the linseed poultice as an application to wounded surfaces.

The following formula is given for an ointment for bed-sores and sluggish ulcers which excrete a fœtid discharge:—Carbolic acid, 20 drops; oxide of zinc, 1 drachm. Rub these together, and add one ounce of resin cerate, the whole being mixed while cold, so as not to volatilise the acid.

At page 58 we read as follows, referring to fractures of the fore-arm :—"The position I prefer is, in every case, that which places the hand in a semi-prone posture, with the thumb directed upwards, and the hand a little disposed to be bent downwards, being the same as in Colles's fracture of the radius, where the pistol-splint is used, and this position, slightly varied, is a very good one, I hold, for fractures of any part of these double bones." We cannot agree to this, as the pistol-shaped splint produces in Colles's fracture the very deformity that is intended to be avoided, as pointed out by Professor Gordon, whose "boat-shaped" splint is the only successful appliance for that injury, which splint is now used not only in the Belfast Hospital, but also in Dublin and Edinburgh with success.

The work before us, we must candidly say, is a valuable contribution to the subject of practical surgery, and reflects great credit on the author for perseverance and industry. We can only add that provincial surgeons are, as a rule, too reluctant to give the profession the benefit of their experience, and for what reason we are at a loss to know.

Annuario delle Scienze Mediche. Riassunto per i Dottori P. SCHIVARDI e G. PINI. Anno iv., 1873. Milano. Roma, Napoli, Palermo, Dot. Francesco Vallardi. 1874,

OUR experience of this annual encouraged us to look forward to the fourth volume with pleasure, and we find that it is a worthy representative of the sort of compilations of which it is the Italian example. All the best works and publications of the year in all countries are carefully watched by the editors, and their contents epitomised with discernment. These are classified under several heads, and thus anatomy, pathology, therapeutics, or other departments of medicine can be looked through in a brief period.

Besides the letterpress, we have some plates with numerous figures illustrative of new instruments invented in the year 1873, and other remarkable events. Thus, there are figures of the sanitary train for the sick and wounded, devised by the French society ; then there is an engraving of Monteverdi's statue of Jenner. Altogether the Italian medical annual is a work we heartily commend to all our readers acquainted with the language of the peninsula.

NOTES, NEWS, AND GOSSIP.

CAUSE OF ANTIPATHY TO QUACKERY.

IT is generally imagined by the public that the antipathy of the profession to quackery originates in a feeling of self-interest, and that quacks take the bread from medical men. We more than doubt if this is true. If the faculty loses and the quackery gains a particular case, that is amply compensated by the ill-health which quackery produces in thousands, and the disposition to fly to physic which it generates in millions. On the whole, the profession probably gains by quackery—certainly its loss must be very trivial. A feeling of self-interest can sway the profession very little either way, and its antipathy to quackery must be sought on other grounds.

We should say that our aversion to quackery takes it rise in a natural feeling of disgust at a barefaced system of humbug. Unless men's minds are warped by the strongest motives towards wrong, they revolt at witnessing it. We see a knot of rascals fleecing and injuring the public by the most dishonest and scandalous arts. We naturally evince contempt and indignation towards the miscreants.—*Canada Lancet.*

THE International Congress, promoted by the Royal Society for the Prevention of Cruelty to Animals, was held last month with considerable success. The Queen sent £100, and a message of humanity. The President, Lord Harrowby, read to the Congress what we may call the Queen's message—a letter from Sir T. Biddulph, which says :—

"The Queen hears and reads with horror of the suffering which the brute creation often undergo from the thoughtlessness of the ignorant, and she fears also sometimes from experiments in the pursuit of science. For the removal of the former, the Queen trusts much to the progress of education ; and, with regard to the pursuit of science, she hopes that the entire advantage of those anæsthetic discoveries from which man has derived so much benefit himself in the alleviation of suffering may be freely extended to the lower animals."

This shows her Majesty's thoughts of vivisection, which was then discussed. Dr. A. de Noé Walker, without calling the scientific utility of vivisection into question, thought the practice ought to be regulated by law, and said that Professor Schiff, of Florence, had received, between October and May, no fewer than three hundred and thirty dogs for vivisectional purposes. The Baroness Burdett-Coutts wrote to protest, in the name of the women of England, against vivisection, as an outrage on human nature and natural religion, and recommending legal enactments against cruelty. Mr. W. Hutton moved, "That painful experiments on living animals, if not already illegal should be forbidden by law, except under licence and precautions for publicity." Dr. Richardson said physiologists had done a great deal to mitigate both human and animal suffering, and that much still remained for them to accomplish. For instance, one person in two thousand five hundred died under chloroform. Physiologists were seeking an agent which would not be attended with this fatal result. Are they to be prohibited from making experiments on animals with the view of obtaining this great boon? He forgot that these experiments are not necessarily painful. We may certainly try the danger of various anæsthetics on animals without being cruel. The Queen's judgment is the correct one, that animals used to promote science should have the benefit of anæsthesia. Mr. Colam said that experiments were now carried on in private ; and, on behalf of the Royal Society, he challenged vivisectors to allow him and a properly qualified observer to attend their experiments. If everything was right and proper, why were not the operations done in public? Mr. Hutton's resolution was carried.

CORRESPONDENCE.

VIVISECTION.

TO THE EDITOR OF THE DOCTOR.

SIR,—My attention has to-day been drawn to an article in your Journal of June 1st, headed "Vivisection," in which you comment on the management of the Laboratory of the Brown Institution.

All that is necessary for me to say with reference to the article is—first, that so far as relates to the Laboratory of the Brown Institution, the assertions contained in it are untrue ; and, secondly, that the statements with reference to this subject which were embodied in the letter to the Chairman of Convocation of the University of London, to which you refer, are perfectly correct.

Your obedient servant,

J. BURDON SANDERSON.

The Brown Institution, June 26th, 1874.

[WE are amazed at this letter, which we invite the writer to reconcile with the facts. The assertions contained in our article are true. We did not "comment on the management of the Laboratory." Does Dr. Sanderson mean to deny that the experiments we described in THE DOCTOR for June 1st have been performed in the Brown Institution? We deliberately repeat that within the walls of the Institution such experiments have been frequently performed.—ED. DOCTOR.]

NOTICES.

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THE DOCTOR.

LONDON, AUGUST 1, 1874.

Multum in parvo.

THE MEETING OF THE MEDICAL COUNCIL.

The Session of the General Council of Medical Education and Registration is the "nine days' wonder" of the month, and the weeklies have given lengthy reports of the proceedings. We shall content ourselves with offering a very brief summary, and expressing our regret that the Council seems unable to do more than engage in long debates which never seem to advance professional interests. Ever since the creation of the Council in 1858 an annual session has been held—with very little result, and 1874 will probably prove as fruitless as its predecessors.

Dr. Paget presided this year, and then retired from office. Dr. Acland succeeds him; so the two elder English Universities will thus have had their representatives elected to the Presidency.

VISITATIONS OF EXAMINATIONS.

The most important subject discussed was the Reports of the Visitors to Examinations, a bulky volume, full of serious facts and suggestions. After an ineffectual attempt to stifle these reports by excluding the Press, Sir Dominic Corrigan pleaded for delaying the consideration of the reports received until all the bodies could be visited. He met, however, with no support, and the Council proceeded to discuss the matter with no slight animation.

The first report taken was that on the examination of the Society of Apothecaries, and that body is certainly to be congratulated on the efficiency of its work. It was thought the Society ought to examine in surgery, and we hope it will do so, for it is now clear that there is a legal right to adopt such a course, and the only reason it has not hitherto been done is a desire to work amicably with the College of Surgeons. But we believe the College examines in medicine, and for the Society to test in surgery would be quite as reasonable. We quite agree with the Council that no one ought to be registered who has not been examined in both medicine and surgery. We strongly urge the Apothecaries to make their examination complete. As other reforms seem as far off as ever, it will soon be felt that, while a single diploma may be registered, the Society has done well to offer a sufficient guarantee that its examinations cover all branches. Thus, the cheapest diploma will become the best of its kind. One of the visitors stated at the Council that the Society's "examinations are as satisfactory as they well could be." Let them, then, add to the subjects surgery, and we shall begin to regard the licence as a veritable double qualification.

The Council next considered the Reports on the Scotch Colleges, and some of these did not appear in a very favourable light, though as a whole they passed the ordeal better than was anticipated in some quarters. The representative of the Irish College of Surgeons attacked them with great vigour for admitting to examinations candidates just rejected by other bodies. We have been accustomed to this complaint from Ireland—it is a sort of Irish medical grievance, and was sure to crop up. We are bound, however, to say the Scotch came out of it better than the Irish, which were next taken into consideration.

It is surprising that the Irish College of Srugeons, so long held up to our gaze as the very pink of perfection, should cut the sorriest figure of all, insomuch that a canny Scot was able in the Council to pay off old scores with a sarcastic allusion to "that infallible body which alone is capable of judging of men's qualifications." The College seems to have withheld the *written* answers of candidates from the examiners, and this being reported, with many imperfections, the Council has distinctly condemned it. The College must make considerable alterations to wash out the stigma.

The Queen's University comes out much better than had been anticipated, and in spite of defects stated, the report is commendatory.

It was resolved to continue the visitations to examinations, so next year we may look for further revelations. Let visitors remember that the other bodies have distinct notice to set their houses in order.

EDUCATION.

Several distinct resolutions respecting education were debated. Perhaps the most important of these was that brought forward by Professor Humphry, seconded by Dr. Parkes, and adopted, to the effect that the certificate of students should "include a statement from the teacher or teachers that the candidate has satisfactorily attended examinations from time to time held on the subject of study to which the certificate relates." In London schools we know that examinations are very general, and, though we have no desire to see teachers trammelled, we shall not regret to find that this resolution makes them universal. There is this, however, to remember, in consequence of the annoyances of the certificate system the practice is growing of making the dean alone sign on behalf of the school. If the new recommendation be adopted by the licensing bodies it will make each teacher more responsible. This may be beneficial, for it will tend to enforce discipline, which is apt at times to grow lax. It will also increase the work of some teachers, but we believe will not be objected to on that ground. Indeed, as we have said, the practice has already been widely adopted.

Another resolution carried was in favour of the limitation of the area of examinations in certain subjects. This subject was brought into notice by Professor Harvey, of Aberdeen, in his excellent epitome of materia medica, and has, we are glad to say, been pronounced upon by the Council. Sir W. Gull tried to make fun of the proposal, and on other points showed himself far too self-reliant and dogmatic for a councillor. It is all very well to laugh at the difficulties of students and try to quiz examinations in zoology that permit a choice of vertebrates and invertebrates. We doubt if Sir W. Gull would like to be examined in either; while the extent of either botany or chemistry is such that those who devote their lives to either select only a part for their special study. We would give Sir W. Gull a year to prepare, and be sure of plucking him in either of these subjects. Why, then, should he laugh at the desire to restrict the area of examinations. The example of his own university and the combined experience of all good teachers is against his flippant objection.

CONJOINT SCHEMES.

It is to be feared we are as far as ever from the realisation of a working scheme. Ireland and Scotland put in no new proposals. England has advanced a step, but it has since transpired that there is still danger of failure. What, then, should be done? For our part we should not regret to see a radical reform effected—beginning with the Council. Meantime, the one thing is for each body to examine in all subjects, and so offer a complete diploma, as the Apothecaries' Society is now advised to do, and as the London College of Physicians has for some time been doing.

Some other business was disposed of that calls for few remarks—thus, Sir D. Corrigan brought forward a Bill that fell to the ground. It only added another body to the already too numerous list.

The Adulteration Act was discussed, and some utterly uncalled-for recommendations made. The next edition of the Pharmacopœia was spoken of, but no date fixed for its publication. Committees were appointed, the finances audited, and other small matters talked over. And so the nine days slipped by, and the Session of 1874 came to an end, and everybody will forget all about the Medical Parliament until this time next year. How different would it be did the Council really represent the profession and possess the powers to enforce its will!

CHRONICLE.

ANALYSIS OF HUMAN BILE.

Oscar Jacobsen publishes (*Berliner deut. Chem. Gesellschaft*, 73, No. 14) the following, which is interesting in connection with the article in the last number of The Doctor.

The bile analysed was obtained from a biliary fistula in a healthy man. It was clear, with a greenish-yellow colour, neutral reaction to test paper, and had a specific gravity of from 1·0105 to 1·0107 at 17·5° C. On evaporation, it left 2·24 to 2·28 per cent. of solid residue. During the first few days it contained traces of albumen and leucin. No grape sugar nor urea were detected. Bilirubin and biliverdin were always present.

The solid residue left, after ignition, 37·62 per cent. of ash, the analysis of which gave the following result:—

	Per cent. of ash.	Per cent. of dried bile.
Chloride of potassium - -	3·39	1·276
„ sodium - -	65·16	24·508
Carbonate of „ - -	11·11	4·180
Phosphate of „ - -	15·90	5·984
„ calcium - -	4·44	1·672
	100·00	37·620

Besides the above constituents were found traces of silica, iron, magnesia, and, in every analysis, copper. The last was found in that portion of the bile which was insoluble in alcohol. Further analysis gave the following results:—3·14 per cent. of the dried bile dissolved in ether, and consisted of—

Cholesterin - - - - - - -	2·49	
Unsaponified fat, with a little oleate of sodium	0·44	
Leithin - - - - - - - -	0·21	
Portion soluble in ether - - - - - -		3·14
Portion insoluble in alcohol and ether - - -		10·00
Alcoholic extract—glycocholate of sodium - -		44·8
Palmitate and stearate of sodium - - - -		6·4
Per cent. of dried bile - - - - - -		64·34

In this bile no trace of taurocholic acid could be detected. In a series of analyses of bile taken from the gall-bladder after death, sulphur constituted from 0·21 to 0·925 per cent. of dried bile in nine specimens, and 2·67 per cent. in a tenth specimen. In three of these the sulphur was entirely in the form of sulphuric acid. In another series of analyses the author found an average of 14·2 per cent. of taurocholate of sodium. Hence, in human bile, taurocholic acid may be wanting completely, but glycocholic acid is always present in greater or less quantity.

ESTIMATION OF ALBUMEN.

Dr. Girgenshon (*Jour. de Chim. Méd.*, January, 1874, from *Neues Rep. f. Pharm.*, 1873, p. 553) states that this is done by precipitation of the albumen with tannin in the following way :—Add to the liquid to be tested one half of its volume of a 20 per cent. solution of common salt, and then a solution of tannin in excess. Collect the precipitate on a weighed filter, wash first with water, in order to remove all the salt, and then with boiling alcohol until the filtered alcohol contains no more tannin, dry the precipitate and weigh. The weight of the filter and precipitate, minus the weight of the filter paper, equals the weight of the albumen in the amount of fluid taken.

The author concludes as follows :—"The albumen contained in the urine of nephritis differs from that found in urine in cases of accidental albuminuria. The tannin compound of the former contains 37 per cent. of tannin, while that of the latter contains about 20 per cent." The albumen of the blood serum reacts with tannin in the same way as that of nephritic urine.

THE SEPARATION OF ACIDS FROM THE ALKALINE BLOOD..

No satisfactory explanation has as yet been given to account for the separation of the acid urine and gastric juice from alkaline blood. The *Lancet*, however, reports that some experiments have been made by Dr. Ralfe in the laboratory of the Charing-cross Hospital which promise to explain this seeming paradox.

Dr. Ralfe introduces an alkaline solution, consisting of bicarbonate of soda and neutral phosphate of soda, into a small U tube, fitted with a diaphragm at the bend, and passes a weak electric current through the solution. In a short time the fluid in the limb connected with the positive pole becomes acid, from the formation of acid phosphate of soda, the salt which gives urine its acid reaction; while the fluid in the limb connected with the negative pole increases in alkalinity. The changes effected in the solution are represented by the following formula:

Bicarbonate of soda   Neutral phosphate of soda
$NaHCO_3 + Na_2HPO_4$
Carbonate of soda   Acid phosphate of soda
$= Na_2CO_3 + NaH_2PO_4$

To account for the formation of free hydrochloric acid in the gastric juice, chloride of sodium is substituted for the neutral phosphate of soda, the decomposition in this case being

Bicarbonate of soda   Chloride of sodium
$NaHCO_3 + NaCl$
Carbonate of soda   Hydrochloric acid
$Na_2CO_3 + HCl$

The fact that from an alkaline solution, containing salts like those found in the blood, acids can be separated which are identical with those found in the urine and gastric juice is extremely interesting, and of physiological importance.

LATEST MODIFICATION OF THE COD-LIVER OIL EMULSION.

THOSE who like cod-oil in emulsion may be glad of a few hints given in the *Archives of Electrology and Neurology*, which informs us that the last report of the Utica Asylum contains a formula for an emulsion that has long been in use in that institution, and to which attention was first called by Dr. Andrews. The writer says he has experimented considerably with various modifications of the original prescription. The latest formula, and one that suits better than any other, is the following :—

℞ Cod-liver oil, ℥iv.;
Glyconin, ʒix.

Glyconin is made by thoroughly triturating glycerine and yolk of egg, equal parts. Add to the glyconin thirty drops of the essential oil of bitter almonds ; then add the oil to the glyconin *very slowly*, drop by drop, stirring vigorously all the time. The success of the emulsion depends on the thoroughness with which this task is performed.

Then add—
Jamaica rum, ℥ij.;
Dilute phosphoric acid, ℥ss to ℥i.

The average dose is one tablespoonful after meals, being regulated mainly by the phosphoric acid.

"The above combination is a most excellent brain and nerve food. If properly prepared, it does not separate, keeps for a long time, and is rather agreeable to the taste. If need be, pyrophosphate of iron can be added, or strychnine, or Fowler's solution. We have used it especially in hysteria and allied affections, and in organic diseases of the nervous system it is also valuable. Consumptives take it in preference to cod-liver oil. As cod-liver oil has a somewhat unpalatable name it is sometimes better, in prescribing for nervous patients, to call this the phosphoric emulsion. The fishy odour cannot be entirely neutralised; but for those who are not familiar with cod-liver oil, neither the odour nor taste of this emulsion, when well made, suggest the presence of the oil."

THE INFLUENCE OF SULPHATES IN THE PRODUCTION OF GOITRE.

M. BERGERET (*Jour. de Pharm. et de Chim.*, January, 1874) attributes the production of goître to the presence of sulphates in the system. These may get into the blood either by drinking water which contains a large amount of gypsum (sulphate of calcium), or by the increased metamorphosis of muscular tissue. In one case cited to prove this, nearly all the inhabitants of a town, which was supplied with drinking water largely impregnated with gypsum, were affected with goître until the water supply was changed, when the disease ceased to be produced.

Analysis of the urine of a very large number of persons affected with goître showed that the amount of sulphuric acid in the urine was increased from two to four times the normal amount.

ACTION OF CHLORAL HYDRATE ON ALBUMINOID MATTERS.

M. PERSONNE (*Jour. de Chim. Méd.*, March, 1874) gives the results of his experiments as follows :—

Fresh blood treated with a solution of chloral hydrate, and kept at the ordinary temperature, coagulates completely; it preserves its red colour, and is not altered by a temperature of 25° to 28° C. So coagulated it yields nothing to water.

Defibrinated blood is also coagulated by chloral hydrate, but the coagulum thus obtained, if treated with water, gives up a substance which has a brownish-red colour.

If a piece of muscle be introduced into a 10 per cent. solution of chloral hydrate, it becomes a little paler, a reddish liquid exudes, which soon deposits a brick-red sediment. If withdrawn after a few hours' immersion, and kept at 15° to 20° C., it dries quickly, becomes brighter in colour, and can be pulverised readily. It does not putrefy. The powder consists of a compound of albumen with chloral, soluble in an excess of either albumen or chloral.

By means of a 10 per cent. solution of chloral hydrate, M. Personne was enabled to preserve animals for several months without decomposition, and, if the solution contains one half its volume of glycerine, the tissues do not become dry, but retain their original flexibility. By this action, Personne explains the longer duration of the effects of chloral over those of chloroform, he being an advocate of Liebreich's theory of the physiological action of chloral, viz., that it acts by being decomposed by the alkalies in the blood into chloroform and formic acid. He states that the first action of the chloral hydrate upon the albuminoid matters which it meets with in the system produces chloroform by means of the alkali of these albuminoid matters. At the same time, these deprived of alkali combine with the undecomposed chloral, this compound forming a sort of reservoir of chloroform, only yielding it gradually as the circulation destroys the compound formed.

This also explains why only a very small quantity of chloroform can be found in the blood of animals killed with chloral hydrate.

TEST PAPER FOR UREA.

M. Musculus (*Comptes Rendus*, 78, p. 132) says: This paper is prepared by filtering urine, which has undergone alkaline fermentation, through filter paper, washing and drying the paper at 35° to 40° C. The globules of the penecillium glaucum, which cause the decomposition of the urea into carbonate of ammonium, remain attached to the filter, and their activity can be restored by placing the paper in water. After filtering, washing and drying as above mentioned, the paper is coloured with turmeric, dried again, and kept for use in a dry bottle. So prepared, it forms a most delicate test for urea. If a piece be dipped in a solution of urea, which contains only one part in ten thousand, it will soon become of a dark brown colour, owing to the action of the carbonate of ammonium formed upon the turmeric, while a piece of ordinary turmeric paper will remain unchanged.

In testing a liquid for urea, it must first be neutralised, and the test paper inserted. Carbolic acid, even to supersaturation, does not prevent the ferment from acting. Albuminoid matters are not acted upon by this ferment—*i.e.*, they produce no alkaline reaction in the time required to form urea into carbonate of ammonium. Uric acid is also unchanged by it.

A quantitative estimation of urea can be made by placing the fluid in a flask, adding a little tincture of litmus and then the test paper. Dilute sulphuric acid is then added until the litmus is reddened, and the whole left for five or six hours at a temperature of 25° to 30° C. The ammonia formed can then be estimated by a standard acid solution.

The detection and estimation of very small quantities of urea in well-waters suspected of contamination by infiltration from water-closets, &c., may be easily and quickly made with this paper.

TO DETECT QUINIA IN THE URINE.

Dr. Vitali (*Jour. de Chim. Méd.*, May, 1874) gives the following process, which requires but a small amount of urine :—

Add to eight or ten cubic centimetres of the urine to be examined five or six cubic centimetres of ether, and to this mixture eight or ten drops of ammonia water or sodic hydrate, and shake. After the separation of the ether, decant it into a capsule with one drop of dilute hydrochloric acid, and evaporate it by a very gentle heat. After cooling, add a few drops of chlorine water, mix with a glass rod, and then add a drop of ammonia water. If the urine contains 0.05 grammes of quinia to the litre, the characteristic green colour will be produced.

TOPICAL APPLICATIONS IN OTORRHŒA.

M. Meniere, in a clinical lecture on otorrhœa gives the following formulæ as convenient and useful in many cases. Although they cannot always be expected to exercise a curative influence, yet, joined to appropriate internal remedies, they are in a high degree serviceable.

In "earache" one or two leeches are to be applied behind the ear, which may afterwards be covered with a poultice sprinkled with laudanum. At the same time two or three drops of the following solution may be dropped into the external meatus:

℞ Aconitæ, gr. i.;
Aquæ, fʒv.—M.

This solution gives better results than laudanum, chloroform, &c., so frequently used. Should the pain be intense, general anodynes may be employed. In chronic otorrhœa the external meatus should be kept thoroughly clean by frequent injections of tepid water, and may in addition be painted once a day with the following solution:

℞ Acid. carbolic., gr. i.;
Glycerin., ʒj.—M.

This solution acts very satisfactorily in modifying the character of the secretion; it is sometimes necessary to increase the proportion of carbolic acid. A ten per cent. solution of nitrate of silver painted upon the internal meatus will often serve a similar purpose. M. Ménière frequently employs the following solution in cases of chronic discharge from the ear. It has the advantage that the patient can apply it himself:

℞ Zinci sulph., gr. iv.;
Glycerin., fʒij.;
Aquæ, f℥vj.—M.

Three to six drops are allowed to fall into the ear, which has previously been thoroughly cleansed with tepid water. The head is to be retained in the inclined position from eight to twelve minutes.

The following solution may be used when great vascularity of the bottom of the ear exists, even where there is perforation of the tympanum:

℞ Plumbi acetat., gr. ss. ad i.;
Aquæ, f℥ss.—M.

ACTION OF NITRITE OF AMYL IN RESTORING TEMPORARILY A MORIBUND PATIENT.

The following interesting case is published by the *New York Medical Journal*:—

I. H., aged thirty-two years, labourer, entered the service of Dr. E. G. Janeway, at Bellevue Hospital, on May 27th, 1874. The history obtained was to the effect that, during the summer of 1872, he first noticed his eyelids to be puffy, and his feet swollen. He continued to work, however, until five months before admission, when increasing debility, complicated with dyspnœa, palpitation, and loss of appetite developed. When admitted, the patient was anæmic, very pale, and stated that his urine had been suppressed for forty-eight hours. His feet and legs were very œdematous, and the rest of his body to a slighter extent. There was increased area of cardiac dulness, with a double murmur over heart anteriorly and posteriorly, with the qualities of a friction-sound of cardiac rhythm. There were also evidences of slight œdema of the lungs. The catheter removed only a few drops of urine from the bladder. Dry cups were applied over the lungs and kidneys, and half an ounce of infusion of digitalis, with half a drachm of acetate of potassa, given every four hours. The next morning the dyspnœa was improved, and about four ounces of highly-albuminous urine passed. About noon Dr. Janeway saw the patient for the first time. He was then unconscious. Pupils dilated. No response on touching the conjunctiva. Complete loss of pulse at the wrist, and breathing of a spasmodic character, such as occurs a few minutes before death. Some nitrite of amyl was obtained, and inhalations of five drops, cautiously increased to twenty-five drops, commenced. After the use of twenty drops, the pupils began to contract, and winking resulted from touching the conjuntiva. The pulse now began to be felt at the wrist. With the use of the last five drops he returned to consciousness, and the pulse at the wrist became full. He was now able to speak, and asked how long he had been faint, and whether or not he would pull through. The inhalations were now suspended, and half an ounce of brandy administered. A man was stationed at the bedside to notify the house-physician of the least approach of dangerous symptoms. In about fifteen minutes another attack occurred, and by the time the physician approached him he was dead.

There can be no doubt that in this case the amyl produced the temporary restoration from all but death, and the subsequent death in so short a time showed the gravity of the case.

This temporary restoration might be at times of great value, and, in a case where the lesions were not so serious, might be prolonged into cure and permanent recovery.

Dr. Janeway has not read of any case in which such a near approach of death was warded off, and is of the opinion that, as a rule, it would not be judicious to give such large doses; but, from the fact that a certain amount remained on the towel, it is difficult to say how much in reality the patient inhaled. He does not believe that the nitrite would prove equally serviceable in cerebral hyperæmia producing unconsciousness, the case under observation being one of cerebral anæmia, with failure of the heart's action from pericarditis.

Autopsy.—Lungs œdematous, with slight hydrothorax. Heart normal in size. Pericardium coated with fibrinous exudation of considerable amount. The sac contained a small quantity of serum. A microscopical examination of the tissue of the heart showed evidences of fatty degeneration in the portions beneath the pericardium. Liver, fatty. Kidneys, of the large, white variety. Evidences of fatty degeneration, with increase of connective tissue. Cortical part of the kidneys anæmic. On one side there was a hydrocele.

JOTTINGS FROM JOURNALS.

Uterine Hæmorrhage.—This class of affection is often both obscure and dangerous. Dr. John Hall Davis has detailed in the *Obstetric Journal* particulars of a case of hæmorrhage as occasioned in a lady, æt. 52, unmarried. The preparatory treatment was most judicious—first sea-tangle, then caoutchouc dilators, with ergot, and gallic acid, also weak injections of the perchloride of iron. The peculiar interest of the case, however, resides in the circumstance that as Dr. Davis could not remove the tumour with the écraseur, or otherwise in its entirety, he managed most successfully to remove the tumour in sections, employing a long curved pair of scissors and a long pair of ovum forceps, well guarded by the fingers. Condy's fluid, then a warm solution of the tincture of iodine corrected the discharges. The patient's health improved greatly, and she actually began to menstruate.

Oatmeal.—In the *Gazette des Hôpitaux* there are some very important remarks on the subject of oatmeal as food for children. This subject is of very great moment, as, owing to the audacity of trade empirics, who are stirring heaven and earth to sell their corn-flour, the immense merits of oatmeal as food for infants and children are liable to be overlooked. The corn-flour is nothing but starch, and prepare it as we may, is wholly unfitted as children's food as preponderant nutriment. It is, in fact, devoid of all, or nearly all, the good qualities of wheaten or oaten meal, and ought to be entirely discarded for such a purpose. From experiments conducted by Dr. Marie and others at Versailles, the children of from four to eight months of age thrive almost as well as when at the breast, and that the tendency to diarrhœa, so frequent and destructive, was thereby wholly obviated. The good effects of oatmeal porridge are well known and appreciated in Scotland and Ireland. It should, however, be understood that wheaten meal and white Indian corn meal form also an excellent porridge. The several merits of all three should be held in assiduous attention by all practitioners.

Coryza.—Dr. Prout, *New York Medical Record*, speaks in warm terms of the efficacy of 20 or 30 minims of the tincture of the perchloride of iron. His formula is—tincture, glycerine, of each up to 8 grammes, or say 2 drachms; a teaspoonful every two or three hours in a little water three or four times. He has obtained almost immediate relief in his own case and the cases of his patients. He leaves off as soon as tokens of amendment ensue, and begins treatment as soon as possible after the onset of the coryza.

Pernicious Intermittent.—In these countries we are happily almost exempt from intermittent fever, both simple and pernicious; but in certain so esteemed health-resorts both these forms of periodic malarious disease subsist, as many and many an Englishman and Englishwoman has experienced to their cost. There are attacks of pernicious intermittent well known both in Algiers and in Italy, in which the affected persons sink down as if stricken with apoplexy. The importance of a correct diagnosis must be obvious. In the *Giornale Veneto* Dr. Namias has described a case of this *febbre perniciosa apopletica.* The patient was plunged in complete coma, the limbs were motionless, and the left side quite cold. Leeches (*mignatte*) were applied to the mastoid apophysis, followed, as soon as the patient could swallow, with large doses, two in all, of the bisulphate of quinine. The subject left the hospital perfectly cured, a result which, unfortunately, is far from constant.

Treatment of Gonorrhœa.—There are practical remarks in the *France Médicale*, by Dr. Ferran, which are deserving of much attention. After some general observations on the treatment of this troublesome affection by means of what he terms substitutive irritation, he goes on to say that in order to obtain the most satisfactory results he employs cubebs and the balsams, not two or three times, but ten or twelve times daily. In this way there is commonly a steady amelioration of the symptoms, and in most cases a recovery in from twenty-two to twenty-six days. Dr. Ferran lays no claim to have discovered this treatment, which he has otherwise employed for a matter of ten years.

Anthrax.—What must be considered a singularly important innovation in the treatment of anthrax is advocated by M. Alphonse Guérin. Two cases having been simultaneously admitted into the Hôtel-Dieu, M. Guérin, instead of the enormous slashes (*balafres*) once resorted to, punctured the summit of the tumour, and through the puncture, by means of a bistoury with a narrow blade, incised the tumour in all directions, effecting as it were a complete subcutaneous crucial incision extending throughout the induration. No other opening through the skin was made. No further incisions were necessary. The pain at once abated. The opening sufficed for all the discharges. There was no hæmorrhage either. The tumour otherwise was enveloped in a cataplasm. When M. Guérin explained his procedure before the Académie de Médecine, M. Gosselin, in his Report, expressed his surprise at the complete evacuation of the anthrax through so small an opening. In one of the cases, a woman of 50 suffered from anthrax in the left lumbar region, 11 by 8 centimetres. Multiplied subcutaneous incisions were made on the 22nd March, and by the 9th of April the recovery was in fact complete. In the other case there was a voluminous anthrax in the right hip, extending to the verge of the anus, with numerous veins. The parts were greatly indurated. The progress of the malady was completely stayed by the subcutaneous incisions, and promised complete resolution, and without the ordinary suppuration.

Strangulated Inguinal Hernia.—In a recent case of strangulated inguinal hernia, reported in the *France Médicale*, there was copious bloody effusion into the interior of the sac. There was also bilious vomiting, as well as vomiting of fæces. A portion of the omentum was strangulated. The scrotum and penis had become œdematous The interns of the Hôpital Necker, whither the patien had been conveyed, chloroformised the patient, and tried the taxis without result. M. Guyon now punctured the tumour. The fluid which issued forth had all the appearance of blood. As the patient was averse to operation, M. Guyon waited for some hours and again punctured.

The fluid to which the puncture gave issue was less sanguinolent than before. The taxis was now resorted to cautiously; the hernia disappeared. A spica bandage was applied over the groin, and the patient did well.

Peritoneal Abscess.—A remarkable case is recorded in *Le Progrès Médical* by M. Pasturaud, hospital intern. It was that of a peritoneal abscess between the liver and diaphragm. The contents penetrated into the right lung, and were evacuated through the bronchial tubes. The patient died. A post-mortem demonstrated the exact nature of the case.

Carcinoma of the Mamma.—How rarely does cancer of the breast, unless with life itself, disappear! Such a case, however, is recorded by Professor Podrazki in the *Wiener Medizinische Zeitung.* The subject was a lady of 54, intelligent, and firm of purpose. She presented herself in Pithas Klinik with a tumour—in a word, mammary carcinoma (*Brustdrüsenkrebser*). She was informed that amputation was needful. She submitted without a word or groan, would have no anæsthesia, and when the tumour, which was the size of a man's fist, was removed, she actually returned to her distant home, accompanied by the kind-hearted operator, on foot. A second tumour formed, to which Landolfis paste was applied. After the eschar fell away another tumour formed about as large as a child's head, which eventually seemed to slough away through a species of gangrene, followed by no return. It is worthy of remark that the axillary glands were apparently not implicated. The patient for some years after enjoyed perfect health. She then left Vienna, and was lost sight of.

Umbilical Gonorrhœa.—A unique case of this singular malady is recorded in *Gazzetta Medica Italiana,* from the *Giorn. Ital. delle Mal. Ven.* It occurred in a youth of 19, already labouring under ordinary gonorrhœa, and doubtless ensued from the contact of matter, and was removed by astringent solutions of the acetate of lead and sulphate of zinc.

Persistent Vision.—A curious case is related in a recent Italian medical journal. The circumstance was that of a medical man who, in the act of reading an article which greatly interested him, fell fast asleep. After slumbering for some time he awakened right up, and much to his surprise the article which he had been reading, the portion which had interested him, was impressed letter for letter, word for word, and line for line on the opposite wall. Similar occurrences have been witnessed from time to time, but rarely to so striking a degree as in the instance here adverted to.

On Famishing Children.—A very important paper on this subject was read by Dr. P. Diday, before the Société de Médecine, and reported in the *Lyon Médical.* He truly says that it is the especial duty of the medical man to see to it, else the cause of the feeble and the oppressed is liable to suffer. The poor are the especial object of the philanthropist; but the children of the rich even sometimes, in fact, want bread. Let us only think of the requirements of the growing frames of boys and girls, and the great evils necessarily accruing from an insufficient supply, while at school and otherwise, of well azotised food, coupled with open air life and effort. Diday, among others, mentions an instance of work girls in the houses of fashionable milliners who, to still their hunger, were actually fain to devour raw chestnuts by night.

Cure for Corns.—Wear sandals, or, like the Irish girls, go barefoot. The *Pacific Medical,* however, commends paring, and inunction with castor-oil. Avoid pressure, and no undue thickening of the epidermis can possibly ensue.

Burn Mixture.—Dr. Buck, of the Bellevue Hospital, dissolves 2 oz. gum tragacanth and 4 oz. of gum arabic in a quart of water; add a pint of molasses, and apply with a brush.—*New York Med. Record.*

Arsenic in Intermittent Fever.—M. Sistach, in a summary, states that he has treated by means of arsenic (*acide arsénieux*) *in a very dilute form,* as administered by the mouth and rectum, 229 cases—that is to say, 137 cases of quotidian fever, 73 tertian, 11 of quartan, 5 of irregular fever, and 3 of masked, and that *all* did well. The cases occurred at Bona, in Africa, and were reported upon by MM. Moutard, Martin, Bouillaud, and Chauffard on the part of the Académie de Médecine. In pernicious intermittent fever the treatment, as might be expected, was less successful.

Martial Lemonade.—Citrate of iron in plates, 1 gramme; syrup, 100 grammes; artificial seltzer water, 900 grammes.—*Le Mouvement Médical.*

Kakke Kakke.—A malady thus named, Dr. Hoffmann states in the *Japan Mail,* is endemic in Japan. It is sometimes attended with insensibility and paralysis, but more commonly trembling and debility. It disappears in winter, and is highly similar to Indian beri-beri.

Pills for Constipation.—Take podophyllin 0.03 gr., honey 9—one dose.

Henry MacCormac, M.D.

TOPICS OF THE TIME.

INTRA-VENOUS INJECTIONS OF CHLORAL.

For the past few weeks the academies and learned societies of Paris have been debating with some heat the propriety of the proposal of M. Oré, of Bordeaux, to inject a solution of hydrate of chloral into the venous system for the purpose of producing anæsthesia.

The following cases in which this operation has been practised have been collected from the various French medical journals, and from the proceedings of the *Académie des Sciences:*—

Case I.—A young man, æt. 22 years, was admitted to the Hôpital Saint André, in Bordeaux, for a necrosis of the astragalus; a sequestrum had been recognised, and it was proposed to remove it. To obtain anæsthesia Professor Oré injected a solution of chloral by means of a graduated syringe into the superficial veins of the right forearm. The injected solution was composed of 20 grammes of chloral dissolved in 60 grammes of water, and filtered with very great care. When the first five grammes of the solution had passed into the circulation the patient felt an irresistible desire to sleep; and after the injection of 8 grammes more he fell into a calm and peaceable repose; but as there was reflex motion of the eyelid when the finger was brought into contact with the conjunctiva, it was deemed advisable to let him have 5 grammes more of the solution. He had now received altogether 18 grammes of the solution, or about 90 grains of chloral, anæsthesia was complete, the pulse was quick and strong, and the respiration deep and regular. During the operation, which was now commenced, the patient neither moved nor emitted a sound. As the anæsthesia produced by chloral is of long duration, M. Oré finds that it is only necessary to apply the electrodes of a strong pile on the pneumogastric nerve to awaken the patient from his slumbers.

Case II.—This is the first case in which M. Oré tried the injection. A young man was suffering from traumatic tetanus, and was brought to the Hôpital Saint André. M. Oré, after trying the ordinary means for combating this malady without success, believed that he would be perfectly justified in having recourse to an injection of chloral. This operation was performed with very great care, and was perfectly successful, for the patient recovered.

Case III.—A young man who had been bitten by a viper, and who was labouring under very grave symptoms, was admitted to the same hospital, under M. Oré's care. The same operation was performed in this case, and with the like good result.

Case IV.—Still more recently another attempt in this direction has been crowned with success. MM. Deneffe and Van Webter, two professors of the University of Gand, have applied Oré's method in an operation for cancer of the rectum. This operation was performed on the 4th June, after anæsthesia had been procured by the injection of a solution containing one-third part by weight of chloral. This was injected into the radial vein by means of a graduated syringe, the point of which was simply plunged into the vein through the skin. The surgeons pushed the injection very slowly, stopping from time to time to observe the pulse and respiration, the whole time occupied being forty-five minutes. No accident occurred, the patient fell into a deep and calm sleep, and the operation was over long before he awoke. The sleep was prolonged for more than eight hours after the operation, and MM. Deneffe and Van Webter, being somewhat alarmed at its duration, tried many means, even electricity, to awaken their patient, but without success; then, seeing that the sleep was tranquil, the patient was left alone; he awakened eight hours later, and was surprised to find the operation was over. This patient was 55 years old; had been operated on before for the same disease. During this operation the pulse was 104 and the respiration from 17 to 19 per minute. Twelve days after the operation the patient was out of bed and as well as could be expected. The operators are so well pleased with the result that they await another fitting opportunity to try it again.

Case V.—On the 31st of May a man was admitted to the wards of M. Bucquoy; he was 31 years of age, and was suffering from hydrophobia, caused by the bite of a dog some six weeks before. The forefinger of his left hand had been very severely torn by the dog's teeth. This strong and vigorous man, during these six weeks, gave no sign of hydrophobia, but on the 29th, on entering his house he appeared very much cast down, and told his family he was mad. The doctor, who saw him on the following day, pronounced his disease to be hydrophobia, and sent him to hospital. The patient was sad, complained of intense headache, was feverish, with a very hot skin, pulse 120, had the usual spasm in presence of drinks and brilliant substances. M. Hanot, the interne, believed that as all medicines had failed to produce any impression on this disease he might as well try the effect of an injection of chloral. The man was ligatured so as to make the veins stand out prominently, and *Auel's* syringe was plunged into one of them, and a solution of one part by weight of chloral to ten of distilled water was injected into it (the median-cephalic). It required one hour and a half to inject 100 grammes of the solution, after which a kind of excitement was observed such as frequently results from the administration of chloroform. Thirty grammes more were administered, and in the evening the patient was able to swallow some fluid; he was perfectly calm, and all spasm had disappeared. As he had made no water for some time a catheter was passed, and some urine drawn off, which showed traces of blood. After the visit of M. Bucquoy the spasms became intense, the hydrophobia returned, and the urine became clear and limpid. Twenty grammes more of the solution were injected into the left saphena vein, the result of which was that the patient enjoyed one hour and a half of good sound sleep. This patient died during a terrible attack of spasms.

That chloral hydrate may be injected into the veins with safety is conclusively proved by the foregoing cases, but M. Collin objects to any intra-venous injection on the following grounds:—

1st. That any medicinal agent employed in such a manner may act in too decided a way upon the cardiac, muscular, or nervous system.

2nd. That the substance so injected might form microscopic clots capable of plugging the capillaries of the lung and producing grave and even mortal lesions.

In the *Académie de Médecine* M. Bouillaud stated that before M. Oré ever attempted to inject chloral into a human vein he had made many careful and very exact experiments on animals, and he thinks that events have perfectly justified M. Oré's attempts.

In Case V. the post-mortem examination showed that, notwithstanding the large quantity of the solution that had been injected, there was not a single clot to be found anywhere.

M. Bucquoy believes that we are warranted in drawing the following conclusions from this case:—

1st. That the act of injection is innocuous when the vein is not denuded.

2nd. That chloral used in this manner is not more dangerous than chloroform.

J. M. Johnston Scott.

WAXY KIDNEY.

Dr. M. Wood, in the *Chicago Medical Journal*, May, 1874, offers the following remarks upon amyloid degeneration, or "waxy" kidney, or, as Niemeyer defines it, "parenchymatous nephritis, with amyloid degeneration of the walls of the vessels, for very unusually is the tunica propria, and still more rarely are the epithelial cells affected." Johnson, an eminent authority upon this general subject, says, "all of the changes of structure commence in the secreting cells of the gland, and are the results of an effort made by the cells to eliminate from the blood some abnormal products—some materials which do not naturally enter into the composition of the renal secretion."

A careful consideration of the subject, however, in the light which general pathology brings to bear upon it, causes a dissent from these views, and forces us to the conclusion that while the normal epithelium still lines the tubules, the protoplasm thrown out is, in obedience to the laws of nutrition, built up into tissues or secretion like those which preceded it; but, the cell-type once lost, the exudate which is being continually thrown out, having now no physiological function to perform, becomes degenerate, and the particular form of degeneration which occurs is that to which the exudate was predisposed.

The nature of this substance, the result of the degeneration, has been variously regarded; thus, Dickinson considers it a variety of fibrin, and Sir Wm. Gull speaks of it as a "hyalin fibroid" substance; Roberts says, "to call it amyloid is simply a misnomer, and an unfortunate one, as it leads to confused notions as to the existence of some connection between waxy degeneration and the (genuine) amyloid substance found in the healthy liver."

The waxy kidney occurs chiefly in persons of a strumous diathesis, and more often in males than in females, because they are more exposed to its exciting causes; for the same reason, adults are more particularly liable than children; and, of adult males, those whose occupation is one of exposure to wet and cold.

The disease is generally symmetrical; that is, both kidneys are more or less affected.

The Appearance of the Patient.—Together with the pasty look of the face, there is a pallid or dingy hue of the skin, of which Dr. Loomis remarks: "It is peculiar; not like the clear pallor of phthisis, nor the dingy pallor of cancer; not easily described, but peculiar to 'Bright's Disease,' and easily recognised after it is once seen." Stewart also calls attention to a peculiar characteristic appearance of the face, which he has observed, "when the surface generally is pale and clear, but a very distinct congestion exists over the cheeks; not a congestion like a blush, but one which is seen by the naked eye to depend upon the distension of small vessels, quite above the size of capillaries."

The Urine.—Albumen is the most common and most important of the abnormal ingredients of the urine, and though it occurs in various diseases, its presence, aside from "Bright's Diseases," is transient, and the quantity small. When we consider the fact that of all animal substances, albumen possesses the greatest endosmotic power, and must, together with the water and salts, pass from the Malpighian capillaries, it seems somewhat strange that it does not appear as a constituent of normal urine; but in its passage through the tubule, it must subserve some further nutritive process, or receive some transformation by contact, either with the cells of the tubule, or with the solid excrementitious portions of the urine which are separated from the inspissated blood of the second set of capillaries.

Of the urinary constituents, urea is also of great importance, as a measure of the activity of the general process of disassimilation—the wear and tear of the system. In the diagnosis of this morbid affection there are to be taken into consideration:

a. The mode of invasion; was it insidious.

b. The condition at onset; as this form never occurs as a primary disease in otherwise healthy persons, but as a sequel always.

c. The etiology; as if it be fairly due to syphilis, to scrofula, to long-continued suppuration, to caries or necrosis, or to any other wasting malady, it is presumably waxy.

d. The prominent symptoms; as if polyuria has existed from the beginning, we should, judging from this alone, be compelled to class it as waxy. Of this symptom, a distinguished author remarks: "It is an unfailing symptom at the early stage in the waxy form, and is absent only when inflammation becomes superadded, or diarrhœa is draining the blood of fluid."

e. The existing complications; the most common concomitant affections being a similar degeneration of the liver and spleen.

The great difficulty in diagnosis, however, is not so much in determining the form, as the stage; and for this we must depend upon our knowledge of the anatomical changes which are taking place in the kidney, as determined by:

a. The colour and amount of the urine.

b. The amount of albumen; which early is scanty, later abundant, and still later again scanty.

c. The sediment; and its character as revealed by the microscope.

d. The size of the casts; it being evident that the cast formed in a tube which has been deprived of its epithelium, is larger than one from a tube not so denuded.

THE OPHTHALMOSCOPE IN DISEASES OF THE NERVOUS SYSTEM.

Dr. Horatio R. Bigelow has communicated a useful paper to the *Detroit Review of Medicine*, in which he sums up the recent advances in the diagnosis of diseases of the nervous system. It will be remembered that the views of Dr. Vance and others have been detailed in The Doctor, and we have no doubt that those of Dr. Bigelow will also be read with interest. He thinks that in all cerebral processes the exact condition may be determined by the æsthesiometer, the dynamometer, the thermometer, and the ophthalmoscope.

The thermometer indicates the local variations of temperature. In some cases of nervous disorder, the difference between the two sides may exceed 12°. (Dr. Brown-Séquard.)

The dynamometer registers the comparative strength of the two sides, and in cases of disease, determines the side of the brain in which it exists the most intensely.

The æsthesiometer indicates the comparative sensibility of the two sides of the body, thus, inferentially, affording us information of the site of disease. The ophthalmoscope affords us a ready appreciation of the condition of the retinal circulation, and hence of that of the brain itself, enabling us to note the increase or decrease under certain physiological states and from pathological causes; while, by permitting an easy examination of the optic nerves and retinal structures, it enables us in certain cases to form accurate judgments of organic alterations of the brain substance. ("Physical Diagnosis of Brain Disease.")

As to the ophthalmoscope, the following practical instructions for the exploration of the papilla are given by Galezowski. ("Etude Ophthalmoscopique sur les Altérations du Nerf Optique et sur les Maladies Cérébrales dont elles dependent.")

1. We should assure ourselves that the cornea and lens are transparent, which we can do by means of the direct or indirect method.

2. Examine first the condition of the pupil, for unless it be sufficiently large, we must resort to artificial dilatation.

3. The observer should know the focal distance of the glass and mirror, in order that he may know the exact distance at which each should be placed.

4. The patient should elevate the head, and look straight in front.

5. During the examination, it is of importance that the patient should direct the eye under examination inwards and slightly upwards, and that it should be entirely relaxed.

6. In order that the fundus may be clearly made out, the glass should be approached or withdrawn until the vessels become clearly visible.

7. With a little attention we can make out the bifurcation of a vessel, forming an acute angle, this angle is always directed to the side of the papilla.

8. Once having determined on which side is the papilla, we throw the light into the eye, and carry the glass to the focal distance and opposite the side in which is the papilla; in this way we expose at once the optic nerve.

9. If we wish to examine the macula, we first find the papilla, then carry the mirror upwards and inwards, and the part which is removed from this point, in distance corresponding to the diameter of the papilla, is the macula—10′. In the examination of the macula we are often harassed by the central reflection of the cornea. In order to overcome this, instead of the spherical convex glass, we can employ a prismatic glass of 20°, each of whose surfaces presents a convexity of two and a quarter inches.

Turning to the uses of the ophthalmoscope in the diagnosis of diseases of the nervous system, Dr. Bigelow quotes *seriatim* the conclusions arrived at by Bouchut. ("Diagnostic des Maladies Nerveux par l'Ophthalmoscopie.")

I. In acute meningitis, cerebral hyperæmia, ventricular hydrocephalus, dilatation and thrombosis of the meningeal veins, the repletion of the cerebral sinuses, and, above all, of the cavernous sinuses retarding the venous circulation of the eye, may confine the blood in the veins of the retina, in such wise as to produce those intra-ocular appearances characteristic of meningeal phlegmasia.

II. In acute simple meningitis, in tubercular rheumatic meningitis, the sluggishness of the cerebral circulation being so nearly identical, the vascular lesions found in the fundus of the eye are nearly identical.

III. In acute meningitis the vascular lesions are apparent in the fundus of each eye, but they are most marked in that eye which corresponds to the cerebral hemisphere in which the phlegmasia is most intense, and in which there are the greatest obstacles to normal circulation.

IV. The retardation of the cerebral venous circulation, presenting an obstacle to the passage of the blood of the ophthalmic vein in the cavernous sinus, is the sole mechanical cause of the lesions of the fundus of the eye revealed by the ophthalmoscope.

V. The peripapillar congestion which is observed in all patients suffering from acute meningitis is only important when it is considerable, and then it obscures the whole or part of the disc.

VI. Partial or general peripapillar œdema which produces dilatation of the veins of the retina to the borders of the disc, in a subject who has doubtful symptoms of meningitis, ought to justify a diagnosis of the existence of that disease.

VII. The varicose dilatation, and the exceeding tortuousness of the veins of the retina, which form large irregularities in the fundus of the eye, indicate usually a great stagnation of the venous circulation occasioned by acute meningitis, by a large cerebral tumour, or by heart disease, but in this latter case a slight cyanosis of the choroid permits us to diagnose between a tortuousness produced by a lesion of the heart, and one produced by disease of the encephalon.

VIII. Hæmorrhages into the retina from one to many millimetres in diameter, and congested spots in the choroid, in an infant who has had acute cerebral symptoms following upon a well-marked febrile excitement, are indicative of acute meningitis.

IX. A stasis of blood and thrombosis are often produced in the veins of the retina, in subjects suffering from acute meningitis, in which case, here and there along the course of the vein of the retina, clots are seen, the blackish portion being separated by a clearer part corresponding to the position of the stasis.

X. Whitish albuminous and fatty exudations, more or less large, have been sometimes observed in the retina (twice out of fifty-seven cases in the course of acute meningitis, once in a case of chronic meningitis), but their presence has no diagnostic importance, for the exudations simulate those of albuminous nephritis, and they are consecutive to hæmorrhage into the retina, in which the colouring matter has been absorbed.

XI. The malformation of the disc, observed twice out of fifty-seven cases of acute meningitis, is not of great significance, yet, as it might be the result of an old compression of the optic nerve by some strange body situated at the base of the cranium, it is a symptom not to be neglected.

XII. Discolouration of the choroid is observed quite often in old people after death, or during the last hours of life; in infants suffering from acute meningitis, which gives to this symptom a measure of prognostic importance.

XIII. Atrophy of the disc does not exist in acute meningitis, unless the disease be a complication of chronic meningitis, of an old cerebritis, or of an old cerebral tumour.

XIV. Unequal dilatation of the pupils exists quite often in acute meningitis, but this phenomenon is not of sufficient frequency to justify a diagnostic importance.

XV. In acute meningitis, there is sometimes an increase in the size of the eye, very sensible by palpation, indicating a hydrophthalmia, with stagnation of the cerebral venous circulation of the choroid and of the retina; but this is not a special symptom of meningitis, being also seen in cases of large cerebral hæmorrhage.

XVII. We must not attach to the vascular lesions of the fundus of the eye produced by meningitis, exaggerated significance, for they are accessories which, added to other symptoms of a disease, confirm a diagnosis of which they are the symptoms, or clear up a diagnosis before uncertain.

XVIII. In many cases these vascular lesions of the fundus are not necessary to a correct diagnosis of acute meningitis, but in other cases they disclose the existence of a disease, heretofore suspected; and before the pathognomonic phenomena appear, the ophthalmoscope will reveal the disease.

XIX. In examining each day the eye of a patient suffering from acute meningitis, we can decide from the appearance of the eye most affected which hemisphere is the most degenerated and we can follow the course of the disease, by the opening up of new intra-ocular lesions.

XX. Among children whose good fortune it has been to recover from acute meningitis, there are often persistent visual troubles which depend upon alterations of the membranes of the eye, consequent upon the vascular lesions occasioned by meningeal disease.

XXI. In cerebral hæmorrhage lesions of motility, of the circulation, of the sensibility, and of the nutrition of the eye, are often produced, which are the consequences of an extravasation of blood into the very substance of the brain.

XXII. The lesions of motility and of sensibility of the eye (strabismus and photophobia), observed in cerebral hæmorrhage, depend always upon compression of the nerves of the brain.

XXIII. It is to compression of the veins of the meninges, or of those of the dura mater sinus, that is to say, to a greater or less sluggishness of the intercranial venous circulation produced by a large cerebral hæmorrhage, that it is necessary to attribute the appearance of vascular lesions, discernible by the ophthalmoscope at the fundus of the eye.

XXIV. Only large cerebral hæmorrhages are sufficient to influence the intercranial circulation to such an extent as to cause the vascular lesions of the fundus.

XXV. Phlebectasia and hyperauxesis, with tortuousness of the veins, peripapillar œdema, and more rarely hæmorrhages into the retina, are the only lesions seen at the fundus in an active cerebral hæmorrhage.

XXVI. When a hydrophthalmia and acute glaucoma are seen in conjunction with a cerebral hæmorrhage, it is necessary to consider them as a passive ocular dropsy produced by the pressure of the clot.

XXVII. The lesions of circulation of the eye, produced by cerebral hæmorrhage, exist habitually in the eye, corresponding to the cerebral hemisphere occupied by the clot.

XXVIII. Lesions of nutrition in the fundus of the eye in cerebral hæmorrhage occur only in those partly cured of the hæmorrhage, then it sometimes produces atrophy of the disc, which is the remote consequence of the irritation of the optic nerve by the serous infiltration of which it, at one time, has been the seat.

XXIX. Partial encephalitis, chronic or latent, is never sufficiently marked, nor sufficiently intense to act in a mechanical manner upon the circulation of the fundus, and it is by destroying the cerebral mass at the origin of the sensitive nerves and motors of the eye, that different visual alterations are engendered.

XXX. The visual troubles produced by partial chronic encephalitis are strabismus and diplopia, papillar or peripapillar serous infiltration, more rarely tortuousness or dilatation of the veins of the retina, never hæmorrhage into the retina, and almost always amaurosis and atrophy of the optic nerves.

XXXI. Optic neuritis is propagated to the brain by an ascending course, and is often the cause of partial chronic encephalitis, occupying the corpus striatum, the optic bed, and the corpora quadrigemina.

XXXII. Different tumours of the encephalon, old seats of hæmorrhage, and sometimes the chronic softening following a cerebral congestion, are habitually the point of departure of partial chronic encephalitis.

XXXIII. An obstinate frontal or naso-frontal cephalalgia, sometimes accompanied by strabismus or by diplopia, or deafness or amaurosis, with serous infiltration of the optic disc, more marked in one eye than in the other, or progressive amaurosis indicate a partial chronic encephalitis produced by a primitive organic lesion of the brain, or by an ascending neuritis reaching as far as the cerebral origin of the optic nerve.

XXXIV. When in amaurosis the lesions of the fundus are only slightly characteristic, we should not hastily conclude to consider as a morbid condition that which may be only a variety of the physiological condition, but if the serous infiltration and papillary atrophy are very evident, we can safely affirm that there exists a granular or fatty alteration, more or less extensive, of the encephalon, in the neighbourhood of the optic bed.

XXXV. In chronic partial encephalitis, ascending or descending, that is, extending from the nervous periphery to the centre, or, on the contrary, extending from the brain to the eye, the two optic nerves, by reason of their decussation, undergo almost in like degree fatty degeneration and atrophy.

XXXVI. Amaurosis consecutive to optic neuritis, or to primary chronic partial encephalitis, is almost always incurable.

XXXVII. Senile cerebral softening, or senile gangrene of the brain, never developes primarily and by itself an alteration of circulation in the fundus, and this is easily explained by the condition of the cerebral substance, in which no cause of compression sufficient to prevent the return of the venous blood from the eye exists.

XXXVIII. If the absence of lesions of circulation in the fundus of the eye, in acute and senile softening of the brain, permits us to distinguish this disease from active cerebral hæmorrhage compressing the dura mater sinus, it is not the same in the case of a small cerebral extravasated clot, producing no intracranial compression, for then there is nothing particular in the fundus of the eye, and diagnosis becomes impossible.

XXXIX. In chronic cerebral softening there is oftentimes a serous infiltration of the outline of the papilla, which simulates that seen in the network of the pia mater, and which we may safely assert depends upon a hyposthenia of its tissues.

XL. When the cerebral softening has passed into a chronic state, there is often in the fundus of the eye an alteration of nutrition characterised by an atrophy of the optic nerve, and which is heralded by amaurosis.

XLI. Phlebitis of the dura mater sinus is the lesion which demonstrates most clearly the influence of mechanical obstacles to the venous circulation of the cranium upon the venous circulation of the eye, and upon the production of intraocular lesions in acute diseases of the encephalon.

XLII. To phlebitis of the dura mater sinus, conjoined with obliteration of the cavernous sinus, are due to hydrophthalmia, congestion of the choroid, dilatation, tortuousness and thrombosis of the veins of the retina, as made out by the ophthalmoscope.

XLIII. In phlebitis of the dura mater sinus, the lesions of the vessels of the retina are always most marked in the eye which corresponds to the cerebral hemisphere in which is found the most considerable engorgement of the sinus by the coagula.

XLIV. In chronic hydrocephalus, a rapid intracranial compression is produced, in proportion to the quantity of serous effusion, which retards, to a greater or less extent, the circulation of the brain and of the interior of the eye.

XLV. In the same way that a supplemental superficial venous circulation is established around the serous cavities affected with dropsy, so in well marked chronic hydrocephalus there is a mesh of venous vessels in the retina which changes completely the aspect of the fundus.

XLVI. The retardation of the cerebral circulation caused by an active chronic hydrocephalus, opposing a greater or less obstacle to the venous circulation of the eye, produces, in the first place, augmentation in the number and calibre of the veins of the retina, then, later, a serous infiltration and atrophy of the disc.

XLVII. Apart from the lesions of circulation, and of nutrition of the fundus produced by chronic hydrocephalus, there are also often in that organ lesions of sensibility, such as photophobia, lesions of movement, such as mydriasis, nystagmus and strabismus, which render the diagnosis more certain.

XLVIII. In young children, at an age in which rachitis is the most common, it is often difficult to distinguish that disease, causing an enlargement of the head, from chronic hydrocephalus, but remember that in rachitis producing enlargement of the cranial diameters, the ophthalmoscope reveals no lesion at the fundus (of circulation), while on the contrary, in chronic hydrocephalus there is usually hyperauxesis of the retina, sometimes peripapillar serous infiltration or atrophy of the disc, with amaurosis and hydrophthalmia, nystagmus and strabismus, which renders the diagnosis certain; here we perceive how the ophthalmoscope gives to the diagnosis of nervous diseases a degree of accuracy hitherto unknown.

XLIX. In tumours of the brain, whether it be by their mechanical action, or from the partial chronic encephalitis which surrounds them, there are derangements of motility, and of nutrition of the eye, which produce strabismus and amaurosis.

L. If the medical man should be called to see a patient deprived of consciousness after having received a blow on the head, or after a fall, and is at a loss to know whether there be a simple shock or contusion and compression of the brain, he should have recourse to the ophthalmoscope.

LI. In violent traumatism of the skull, the hydrophthalmia indicates sometimes a dropsy of the humours of the eye, in connection with a deep alteration of the corresponding cerebral hemisphere.

LII. Congestion of the retina, more or less marked, partial or general peripapillar œdema, dilatation and tortuousness of the veins of the retina following upon a traumatism of the head, indicate severe contusion or a considerable compression of the encephalon.

LIII. In the insensibility produced by cranial traumatism, there is nothing appreciable in the fundus of the eye, if the shock be slight.

LIV. The ophthalmoscope gives but few signs in the diagnosis of general paralysis, and even without these the diagnosis could be made out with sufficient precision.

LV. Progressive general paralysis, with or without alienation, acts sometimes on the mobility and nutrition of the eye, for it occasions atrophy of the disc, which is rare, it destroys the synergy of the iris, which renders the pupils unequal, engendering a species of papilla ataxia, characterised by instability of the disc, which greatly interferes with the efficacy of the ophthalmoscope.

LVI. In general progressive paralysis, silver nitrate acts favourably on the muscular paralysis, and greatly ameliorates the condition of the patients.

LVII. In chronic myelitis visual troubles are only occasionally produced, but when the disease is seated in the anterior columns of the cord in the dorsal region, it may cause diplopia, feebleness of sight, and even amaurosis.

LVIII. In almost all cases of locomotor ataxia the visual derangements of obnubilation, strabismus, diplopia and amaurosis, which are referable to the lesion of the anterior columns of the cord, disclose the existence of that alteration.

LIX. The action of the anterior columns of the cord on the great sympathetic at the neck, through the anterior branches of the first two dorsal pairs is the cause of the oculo-papillary phenomena, and of the visual troubles and amaurosis observed in locomotor ataxia.

LX. Visual disturbances of accommodation, of amaurosis by serous infiltration of the papilla of the optic nerve due to chlorosis, may manifest themselves in subjects convalescing from acute diseases (typhoid fever, scarlet fever, pneumonia, &c.), or convalescing from diphtheria.

LXI. Consequent upon diphtheria amaurosis is due to many causes: 1st. Paralysis of the ciliary muscle which presides over accommodation (Follin). 2nd. In subjects who have had diphtheritic albuminuria, to a chloro-anæmic serous infiltration of the fundus of the eye, which alters the substance of the retina or of the optic disc, and which later may cause atrophy.

LXII. In the convalescence from grave acute diseases the amaurosis which may result depends generally on a partial serous infiltration of the optic nerve and of the base of the brain, under the influence of anæmia.

LXIII. In the intervals of attack in essential epilepsy there is no alteration of the papilla of the optic nerve, nor of the vessels of the retina. (This assertion, Dr. Bigelow thinks, is open to criticism.)

LXIV. After an attack of epilepsy there is always seen in the fundus of the eye, dilatation of the veins of the retina, which diminishes, little by little, for some days.

LXV. In many epileptics there is a vascular appearance, or angioplania of the fundus, or an augmentation in the diameter and number of the veins of the retina, and if these derangements in the organisation of the ocular vessels correspond to a similar anomaly in the brain, which is possible, we may find in these lesions the cause of certain epilepsies, even now considered as essential.

LXVI. There is often associated with epilepsy, choroid atrophy, pigmentary retinitis, patches of pigment, retinal exudations, and retinal hæmorrhage, which evidently depend upon the epilepsy.

LXVII. In symptomatic epilepsy the ophthalmoscope almost always discovers a serous infiltration and an atrophy of the papilla of the optic nerve.

LXVIII. A visual disturbance, described under the name of amaurosis, often exists during the course of acute and chronic albuminous nephritis.

LXIX. A more or less extended infiltration of the papilla, linear hæmorrhages along the vessels, punctated hæmorrhagic spots, white fatty patches of the retina, and sometimes a fatty infiltration of the bands of the optic nerve near the tubercula quadrigemina are the causes of amaurosis which developes at the commencement of acute and chronic albuminuria.

LXX. Serous infiltration of the papilla, or of some points of the retina, small miliary hæmorrhages, and white albumino-fatty granulations of the retina, in a subject with enfeebled sight, reveal the existence of diabetes or of albuminuria.

LXXI. It is evident that the ophthalmoscope discloses nothing indispensable to the diagnosis of idiocy, and that if in that disease, or in some idiots and mutes, there is in the fundus of the eye an exaggerated deposit of pigment in the retina, this lesion is not sufficiently frequent to establish any cerebral condition.

LXXII. Even at the very moment of death, the choroid becomes pale, the artery of the optic nerve becomes invisible, and the veins of the retina cease to be appreciable.

LXXIII. In a person just dead the cornea discloses to the ophthalmoscope the appearance of a pane of glass wet with rain and besprinkled with small drops of water.

"The principal alterations in vascularity and structure which can be studied with the ophthalmoscope in tubercular meningitis, and the diseases which simulate it, are:

"1st. Slight congestion of the disc and retina.

"2nd. Intense congestion of the disc and retina.

"3rd. Intense congestion with œdema of the disc.

"4th. Inflammation of the disc and surrounding retina.

"5th. Anæmia of the disc and retina."

Bouchut, Vance, and others believe that in cases of Bright's disease the first assured intimation that we shall have of the existence of that lesion, as opposed to certain cerebral disorders which simulate its invasion, will be afforded by the ophthalmoscope.

Dr. Bigelow observes that tumours of the cerebral peduncle may produce amaurosis. The anatomical relations of this part of the brain with the optic band will furnish the explanation. This band is applied to and surrounds the peduncle; between the optic band and the peduncle there are numerous nervous anastomoses, so that an appreciable disorder of the peduncle would be transmitted as an inflammation to the visual organ. Among the symptoms which would aid us in diagnosing an amaurosis due to an alteration of the cerebral peduncle are hemiplegia of the side opposite to the lesion; amaurosis, most often found in the eye on the same side as the lesion; sometimes double amaurosis and paralysis of the third pair on the same side. An amaurosis due to an alteration of the peduncle of the cerebellum, may be distinguished as follows:

1. Intense cephalalgia near the occiput or temple.
2. Great dizziness, the patient simulating a condition of intoxication.
3. Feebleness of one part of the body, without complete hemiplegia.
4. Loss of hearing, often on one side.
5. Almost constant mydriasis.
6. If the amaurosis were due to an apoplexy of the cerebellum, there would be no papilla change.
7. If it is an old amaurosis, due to cerebellar tumour, there is an optic neuritis, which indicates the existence of some morbid process in the tubercula quadrigemina, the optic bands, and the chiasm.

We recognise an amaurosis due to an alteration of the tubercular quadrigemina, by

1. The amaurosis is always preceded by cerebral symptoms.
2. The loss of sight is very rapid, being destroyed within from eight to fifteen days.
3. The pupils are fixed, but not sensibly dilated.
4. The papilla of the optic nerve does not show any marked alteration during one or two weeks; after this time progressive atrophy sets in.

In tumours of the optic nerve we have :

1. Exophthalmia.
2. The movements of the globe of the eye are in a great measure preserved, if it is not malignant tumour, and if the muscles be not implicated ; on the contrary, the eye has lost its mobility when a cancerous tumour invades the orbit, optic nerve, and muscles.
3. The disc presents characteristic signs of neuritis, with engorgement of the vessels.
4. The sight gradually fails.

There is a peculiar condition of the retina, which is described by Hughlings Jackson (*Lancet*, 1869) as occurring in an epileptic convulsion, which has been also noticed by Dr. Vance (*Canada Medical and Surgical Journal*, June, 1874.) The optic discs are extremely pale, and the vessels apparently disappear for a time, and reappear with expiration. In some chloro-anæmic cases, where there is excited and insufficient action of the heart, we may meet with that rare affection known as ischæmia retinæ. The retinal arteries are greatly attenuated, the veins irregularly dilated, and the optic nerve indistinct in its outline.

In some cases of uterine derangement in hysterical, nervous women, we may find retinal hyperæsthesia, characterised by photophobia, muscular twitching, and lachrymation.

In regard to optic neuritis, Dr. Hughlings Jackson's views are of the greatest interest.

In all the more common forms of brain disease due to anæmia, or hyperæmia of the intra-cranial vessels, the ophthalmoscope will reveal a similar condition of the vascular supply of the intra-ocular structures; and this is of inestimable advantage, since it allows us to discriminate in the uses of drugs which increase or diminish the vascular supply.

In medico-legal questions the ophthalmoscope becomes a superlative power. By its use we can trace the criminal act of an apparently sane man to the delirium of a temporary congestion acting upon the prolonged tension of a dominant idea. It tells the secrets of epileptic vertigo, and reads the inner workings of a mind diseased in a way unknown to other modes of investigation. I cannot doubt that, as our knowledge of the nervous system becomes more and more perfect, and the relations of the intra-ocular structures to the general circulation more thoroughly established, no diagnosis of disease of the brain or spinal cord will be complete without the use of the ophthalmoscope.

FOURNIER ON GUMMY TUMOURS.

Dr. C. R. Drysdale—most industrious of English syphilographers—is doing a service to the profession by the translations he is publishing in the *Medical Press and Circular* of Dr. Fournier's clinical lectures. We select some paragraphs on gummy tumours :—

First Period.—The gummy tumour is seen in the form of a tumour, solid, hard, cold, indolent, and not inflamed.

Second Period.—This tumour softens, and becomes fluctuating. Then a sub-inflammatory process takes possession of it ; the tumour becomes reddish, and simulates in some of its shades a phlegmonous abscess ready to open.

Third Period.—The tumour opens, ulcerates, eliminates its slough, then, by the destruction of its cutaneous covering, converts itself into an open ulcer, of bad aspect, still covered with shreds of gummy material.

Fourth Period.—This ulcer cleanses itself, is converted into a wound of better appearance, then is repaired and cicatrises. In this is resumed all the pathological history of the gummy tumour.

And in how long time are there produced these successive phases of the gummy tumours. What in a word is the duration of the gummy tumour ?

1. On the one hand this duration is always long ; it never is less than some months, three to four months at least—six to eight months on the average—sometimes longer.

2. On the other hand, this duration is very variable. The varieties above all are in the two first periods, and especially in the first, for the two last (at least in general and making reserve for certain cases to be spoken of soon) evolve themselves in a pretty regular way, pretty equally and relatively rapidly.

The first period, or period of formation, is above all unequal with regard to its duration—sometimes rather short, at others slow, extremely slow. There are cases where the gummy tumour, when formed, remains stationary for a very long time, without apparent modifications—and similarly for the second. There are some gummy tumours which quickly soften ; hardly are they formed before they fluctuate. There are some which soften very slowly and partially, this taking place in various isolated parts of the tumour.

On the other hand, once the peripheric inflammation has declared itself, things go on pretty quickly and pretty equally in different patients. A few weeks suffice to empty the gummy tumour and to bring it into the state of an ulcer. In the ulcerated condition, it may remain a shorter or longer time, but however little a treatment merely topical be employed, the cleansing and reparation of the ulcer is produced pretty promptly.

Varieties.—What I have until now described is the gummy tumour in its simplest form and its most elementary type, without any accident or complication. Now, to be faithful to what we see at the bed-side, we must add that the gummy tumour does not always present itself in this typical form. It is subject, on the contrary, to certain varieties of symptoms and of evolution which I ought to point out. I will only indicate to you in this chapter of varieties what is the most essential, certain that your medical education will fill up the unavoidable omissions in this short *résumé*.

Among the variety of symptoms, two points alone are worthy of arresting our attention—

1. I have represented to you the gummy tumour as a tumour essentially indolent, not causing of itself any pain, and insensible to pressure. This is the case, in fact, in the majority of such tumours, at least in 95 in 100 of them. But you ought to know also that in certain cases this tumour, far from being indolent, determines on the contrary rather severe pain, even violent and acute pain.

And when does this take place ? In a solitary instance : when the tumour is in relation with a trunk of a nerve or a nervous filament which it compresses or surrounds. You will find numerous instances of this in science. Thus, M. Ricord had a case where a gummy tumour in the groin exerted severe pain of crural neuralgia, and irradiated all over the thigh from the groin to the knee ; whilst in another case, seen by the same author, two gummy tumours seated in the course of the ulnar nerve provoked severe pains radiating over the forearm and the two little fingers, thus following clearly the distribution of the nerve. In a case of Nélaton's, a gummy tumour in the axilla caused rebellious neuralgic pains of all the limb in the shoulder. In another case, well studied by Zambaco, a tumour seated on the forearm, in the region where the pulse is felt, caused pain of the anterior aspect of the three first fingers and pains radiating upwards to the shoulder.

2. I have told you that in the majority of cases the gummy tumour did not of itself cause any functional annoyance. This is the case in all instances where this tumour is neither injurious by its size nor its situation.

But it is quite different in opposite conditions. It is useless to say, for instance, that a large tumour becomes by its volume alone the origin of functional disturbances, or again, that a tumour seated on a movable part, such as the jaw or the hand, may prevent motion. A voluminous tumour seated in the submaxillary region prevented the patient from eating, and even impeded respiration and deglution from the compression which it exercised on the pharynx.

A fortiori, when a tumour is in the vicinity of a nerve, it may cause, besides neuralgic pains, functional disturbances of more or less important character? In Zambaco's case the patient, who was employed in ironing, experienced, from the gummy tumour seated in the region of the pulse, congestion of the hand, and such a diminution of muscular power that she could no longer hold her iron. In Nélaton's case the gummy tumour in the axilla caused very severe pain, a swelling of the whole limb, formication, and a notable diminution of muscular power.

But all of these have but a secondary interest; all these varieties of symptoms might have been forseen. On the contrary, the following is of more importance to be known:—

Variety in Number.—In the most frequent cases we observe either a single gummy tumour, or again, two, three, or four such at most on the same patient. It is far rarer to see a greater number of these tumours.

But in certain cases, and notably in patients rudely assailed by malignant syphilis, we meet with multiple gummy tumours, and when these tumours commence to multiply they multiply with strange facility. This is a true gummy diathesis. We then see eight, ten, twelve, or fifteen at the maximum, of unequal volume, disseminated, and of different degrees of development, or reunited in groups. One of our patients had a group of six tumours on the back. As another example of these tumours, remember the case of that patient I showed you in our first meeting: she had four tumours on the head, three on the legs, two on the forearm, and one on the spine of the scapula.

This is not all; but from this moment we leave usual cases, and enter the field of exceptions. In some patients, even more numerous gummy tumours have been seen—twenty, thirty, thirty-five, fifty. M. Cazenave has mentioned a patient whose arms and shoulders were covered with gummy tumours: "There were certainly more than fifty." The two arms presented the strangest appearance; they were quite knotty, and presented a coppery colour, very marked; some of these tumours were hollowed out by characteristic ulcers.

M. Corvisart has mentioned a patient who presented with several other lesions incontestably syphilitic more than 100 tumours on the breast, belly, and arms. Indeed, there is more yet, and here we enter quite into the extraordinary:—

You will find in the *Bulletin de Thérapeutique* of 1845 a case related by Lisfranc, in which a patient had on the arm, forearm, and thighs, 160 gummy tumours, and these tumours were large, would you believe it? The smallest were the size of a little hazel-nut, and the largest that of a small pear. Iodide of potassium was given. In eight months of treatment there remained only forty tumours; the 120 had been cured by resolution. If we suppose this case to be authentic (I mean not amenable to objections with regard to the nature of the tumours) we must none the less take it for a fact completely exceptional, a true pathological curiosity.

Varieties in Volume.—I have brought before you the gummy tumour as usually being of small volume, about a walnut in size; I have also added that the volume may be considerable (that of a hen's egg or turkey's egg). Now, in some rare cases, this volume may be surpassed, and greatly. To cite only two extreme cases, I have observed a gummy tumour of the thigh measuring eight to ten centimetres in diameter horizontally, and fourteen vertically, with a thickness varying from two to six centimetres, *i.e.*, a tumour as large as the half of a fœtal head. Dr. Mendeville has seen at the Val-de-Grâce a gummy tumour still larger; this was on the head. It descended from the orbit to the neck, which was attacked for a length of five to six centimetres; setting out from the nose it went as as far as the occiput, that is, the lower half of the face, a great part of the neck, and all the lower part of the cranium were converted into an enormous gummy tumour.

Facts like this, though rare, are of importance to be known; and I point them out more willingly since they are but little known in general, and have not as yet, as we may say, right of sojourn in science, if we may judge at least by the silence of our classic writers on the subject. As to the interest they excite, you will understand it without my pointing it out. On account of their rarity and their excessive volume these tumours are apt to be taken for tumours of another nature—for malignant tumours, and especially cancers, and hence they are apt to be subjected to grave surgical treatment. The proof is, that in the two cases I have just cited, the diagnosis of cancer had been at first made by different practitioners; in the one an operation had been proposed; in the other, very fortunately for the patient, this supposed cancer had been declared not to be fit for operation. It got well under iodide of potassium.

Complications.—The principal complications of the gummy tumour relate either to the evolution of the gummy ulcer or to the reaction exercised by the tumour on the integuments in its neighbourhood. Let us first of all speak of those which relate to the evolution of the gummy ulcer. When the gummy ulcer is produced by the evacuation of the tumour and ulceration of the skin which covers it, it does not always tend to repair and cicatrise. Far from this, in certain cases, on the contrary, it persists if not attended to, for a long time. Thus, I have seen a patient with a terrible ulceration of the scrotum following upon a gummy tumour beneath the scrotum. This ulcer, the nature of which has remained unrecognised, dated several months back.

The gummy ulcer may progress, extend, and this far beyond its early limits, by destroying the whole thickness of the integuments, and besides putting on all the characters of a gummy ulcer which I have described above. This is the extended gummy tumour. It may even (but this is very rare) take on the phagedænic form.

In the second place, gummy tumours may create complications in their vicinity. Thus, gummata of the cranium, when unrecognised and untreated, have been known to denude the cranial bones, cause osteitis and necrosis (without mentioning the other possible accidents of these last lesions by reaction on the brain).

Dr. Mendeville has related the fact of a gummy tumour seated near the sterno-clavicular articulation, which, unrecognised and untreated at first, caused caries of the clavicle and sternum, a caries which in its turn brought on other complications and was followed by death.

Relapse of Gummy Tumours after being cured.—In the last place I will point out to you a fact but little known, and absolutely neglected by our classic writers, and yet very worthy of interest, as it seems to me. This is a sort of posthumous complication of the gummy tumour. I will explain myself. When a gummy tumour has gone through its evolution, run through all its phases and become cicatrised, it may happen—would anyone think so—that all is not over with it. It may happen that it will be born again, as we might say, from its ashes, and reproduce itself by ulceration of the cicatrix. Of this I have already seen several examples. I have had a typical one modelled, which will explain to you better than I could do the renewed life of the gummy ulceration. Here it is:—

One of our patients, most severely attacked by syphilis, was affected, besides other accidents, with a gummy tumour of the foot. This tumour ran through its period and became cicatrised. Then, some time afterwards, the scar, although well made, and appearing to be resistant and definitive, opened at several points. New ulcers appeared, hollow, with sharply-cut edges, putrilaginous base, and quite resembling those which the scar had followed.

Diagnosis.—Like that of all syphilitic lesions, the diagnosis of the syphilitic gummy tumour rests upon these three orders which I have spoken to you about some time ago as forming the basis of all diagnosis—the consideration of the antecedents, concomitant symptoms, and the characters peculiar to the lesion. I need not return to speak of the importance of the two first elements of diagnosis. Let us come to the proper characters of the lesion.

Does the gummy tumour present anything special or pathognomonic. As to pathognomonic, I dare not answer yes absolutely; but as to very special, I reply yes. That the gummy tumour is most specially destructive is, on the one hand a proper anatomical fact; on the other, an evolution proper to itself. The anatomical fact is the existence of the gummy slough, of this fleshy slough, white and filamentous, of which I have spoken to you already. The evolution is still more characteristic, and it is this which nosologically and clinically in my idea distinguishes best of all the gummy tumour, that is to say a tumour, primitively solid, becoming soft further on and ending in an ulcer of a rather special aspect. Solid tumour, softened tumour, and consecutive ulcer, thus is the triple phase of the gummy tumour. Well, if each of the three terms of this evolution be not special in itself, their grouping is truly characteristic of the gummy tumour.

Add to this that certain attributes of secondary character confer also on the gummy tumour a rather distinct physiognomy: the rather rounded form of the tumour, indolence at the commencement, volume usually not very large, central softening, nature of the liquor evacuated, sloughy appearance of the consecutive ulcer, stationary tendency of the ulcer, &c. There are in these various signs assuredly useful elements of diagnosis.

It is certain that a tumour which runs through three successive stages, in each of which it appears under a different form, may often and must affect resemblances and analogies of aspect with morbid states, and very different morbid states. Thus, the solid gummy tumour approaches in its symptoms all solid tumours: adenoma, cancer, fibroplastic and other tumours; the fluctuating gummy tumour has a certain analogy with cold abscess, or scrofulous abscess: the boil, sebaceous tumours of the skin when dissolving, &c.; the gummy tumour in the state of an abscess may be confounded with other syphilitic lesions of ulcerated form, with simple ulcers (notably on the lower limbs), with scrofulous ulcers, &c. But it is also certain that if, at a given moment of its evolution the gummy tumour has some resemblance with one or other of these morbid states, it differs essentially from them in its entire history and evolution.

Thus, the clinical progress of the gummy tumour (without even speaking of commemoratives) permits us pretty easily in general to distinguish this tumour from the different morbid conditions mentioned above.

I will not, then, insist in respect to differential diagnosis except upon one point, because that appears to me to have a considerable practical importance—that is, the differential diagnosis of the gummy tumour from cancer. That, gentlemen, is not a confusion invented at pleasure. This confusion has been made many times, and I have already spoken a word to you about it Sometimes, indeed, it has ended in operations much to be regretted, of which some examples are contained in science. The affair then merits all your attention.

On what basis are we to institute the differential diagnosis between the gummy tumour and cancer?

Four orders of considerations may serve to make this diagnosis: 1, etiological considerations; 2, differences between the symptoms proper to each lesion; 3, state of the glands; 4, influence of treatment.

1. *Etiological Considerations.*—The gummy tumour has always been preceded by accidents of specific character, and perhaps may be accompanied by actual specific accidents. There is nothing like this in cancer. Let us reserve, however, here, the possibility of morbid coincidence, for a cancer may develope itself on a subject formerly syphilitic. Cancer developes itself by preference at an advanced age, and often in subjects hereditarily predisposed; the gummy tumour on the contrary, has no favourite age.

It is useless to tell you, however, that these first considerations have only a very relative value, and that we cannot found any absolute diagnosis upon these.

Clinical considerations are of more importance, and may be summed up in the following manner:—

In *cancer* the tumour is almost always solitary; the gummy tumour is sometimes solitary, often multiple.

The cancer tumour may be of any size, and is generally voluminous; the gummy tumour is small, or at most, of medium size.

The cancer is irregular in form, ill limited, and especially with protuberances; the gummy tumour is regularly ovoid, rarely with protuberances.

The cancer tumour is adherent, or becomes rapidly adherent to the skin; the gummy tumour is not adherent.

Cancerous tumours are painful, stabbing pains; the gummy tumour is indolent. And note that we compare here only the gummy tumour and cancer in the crude condition. If we were to pursue this parallel to the ulcerous period, we should have to point out many other differences.

Thus, the cancerous ulcer, proceeding from the superficies to the centre, and being irregular, fungous, with soft vegetations, bleeding, fœtid, and hæmorrhagic and extensive, &c., is very different from the gummy ulcer which follows a central softening and elimination of a slough, and never presents cancer buds.

3. *Condition of the Glands.*—I have designedly separated this special sign from the other clinical elements, hoping thus better to express its great importance.

In cancer the glands are very rapidly affected; in the gummy tumour the glands are intact.

This is an excellent sign, which, with very few exceptions, suffices (at any rate at a certain period) to distinguish cancer from gummy tumours.

4. *Treatment.*—There is no action on cancer by iodine or mercury. On the gummy tumour the resolutive action of these remedies is rapid, with very rare exceptions. Treatment here serves as a *touchstone*, as they say, so rapid is its action. It is therefore an absolute rule of practice, in the conditions where the diagnosis of cancer and gummy tumour may offer some difficulty, never to operate before having tried iodide of potassium. In fact, if we open the journals, we shall find numbers of observations similar to the following: A tumour presents, it is said, all the signs of cancer; to free the conscience, iodide of potassium is given, and the practitioner is stupefied by observing this cancer resolve, melt away, and become absorbed. The pretended cancer was only a gummy tumour. I have myself seen several cases of the kind.

Prognosis.—Gummata of the cellular tissue have in general no direct gravity: there is more or less prolonged suppuration, with destruction of the skin to a greater or less extent, persistent scars; that is in sum the evil they cause. They are not truly serious, as far as lesions, save in a relatively small number of cases, and rather rarely. But gummy tumours are especially grave on account of the conditions they indicate: they testify to tertiary syphilis; they show that syphilis is entered into that period where serious lesions may appear.

In this point, again, there is a distinction worth making. An isolated gummy tumour—even two or three such tumours have the same prognostic signification as any other tertiary accident: they testify to the tertiary condition, that is all; they do not announce a specially grave form of syphilis.

Multiple gummy tumours, on the contrary, coming on simultaneously, or succeeding at short intervals, have an extremely grave signification: they testify to syphilis of malignant nature; they point to a profound infection, an unfortunate tendency of the diathesis towards morbid products multiple and dangerous, and to a grave reaction on the general health. When you see multiple gummy tumours on a patient, be warned that you are about to have rude attacks to support.

Everything is to be dreaded in such like cases; and the proof of this that multiple gummy tumours figure habitually and in the first rank in the *cortége* of the accidents which accompany syphilitic cachesia.

If now we make the influence of treatment intervene in the balance of the prognosis, we arrive at this result: Isolated gummy tumours (or at any rate non-multiple) in general undergo most marked curative influence from specific treatment. They are cured by the iodide of potassium. It is a miracle even to see how easily the iodide absorbs them. Multiple gummy tumours, on the contrary, are infinitely more obstinate: often they get well at one point only to arise in another: sometimes even they resist entirely.

SPECIAL DEPARTMENT.

QUARTERLY REPORT ON DERMATOLOGY.

By H. S. Purdon, M.D., L.R.C.P.,
Physician to the Belfast Hospital for Skin Diseases, &c.

THE HAIR NEAR AN ANEURISM.

M. Broca has made the singular observation that in cases of aneurism the hairs about the part affected undergo a remarkable hypertrophy. He explains it partly by the stimulus from stasis of the blood, and partly by the lesion of the nervous tissue consecutive to the reduction of the circulation.—*Gaz. des Hôpitaux.*

SEBORRHŒA CAPITIS.

Dr. Duhring (*Philadelphia Medical Times*, May 2nd, 1874) offers the following remarks on seborhœa capitis, a disease characterised by abundance of scales and an underlying red skin, somewhat shining in appearance. There are two varieties—viz., seborrhœa oleosa and seborrhœa sicca. The former is characterised, as its name would indicate, by increased fluidity of the sebaceous secretion, which is also poured out in such quantity that the affected skin frequently looks as if it had been freshly anointed with oil. This variety is most usually found on the face, although it sometimes occurs on the scalp and elsewhere. When persons who are exposed to dust or dirt become subjects of this variety of the disease, the visage presents a peculiar and constant grimy appearance, which nothing but frequent cleansing can prevent.

In seborrhœa sicca, on the contrary, the more solid constituents of the sebum predominate, and the secretion assumes an inspissated condition; hence the name, dry seborrhœa. It is the latter variety of seborrhœa which we have in the case before us.

This affection is not invariably confined to the scalp; on the contrary, we frequently see it on the face; and, in fact, it may occur in any part of the body where there are sebaceous glands. It is decidedly more common, however, in the scalp, since in this locality the sebaceous glands are more numerous and active than elsewhere.

When seborrhœa sicca occurs in non-hairy portions of the body, its appearance is decidedly modified; fewer scales are detached, and the diseased surface usually presents simply a circumscribed patch of congested skin, with slightly roughened cuticle.

The pathology of the affection is as follows: When from any cause the sebaceous glands take on abnormal action, not only is their secretion altered in one way or another and poured out in increased quantity, but their epithelial investment itself becomes to a certain degree affected, and the lining cells are reproduced and thrown off with unhealthy rapidity. It is the cells constituting this lining membrane, as well as the inspissated sebum which mats them together, which go to form the pearly-grey scales observed on the surface of the skin.

The rapidity with which the scales are thrown off is astonishing. This rapid proliferation of the lining epithelium with abnormal and excessive secretion from the sebaceous follicles may go on for years if unchecked, and finally the disease may involve the hair-sheaths themselves, and cause the death of the hair. Seborrhœa becomes in this way one of the most frequent causes of premature baldness.

The origin of the affection is usually to be found in some defect of nutrition, such as chlorosis or anæmia in both males and females. In the latter, irregularity in the performance of the menstrual function is a frequent cause. In fine, all those conditions of want of health which are indicated by cold hands and feet, as well as various forms of indigestion, may be indicated as among the known causes of seborrhœa.

THE FUNGOUS FOOT OF INDIA.

Dr. Charles M'Questin, M.D., of San Francisco, in the *Pacific Medical Journal* for April, states that during his residence in Mexico he saw and treated several cases of fungous disease of the foot, a disease but little if at all known to the medical practitioners of that State. He believes the disease to be identical with the fungous foot or mycetoma of India, and mentioned by few modern authors, except as existing in India.

While in charge of the Civil Hospital in the city of Hermosillo, during a period of two years, there came into the hospital three cases of this disease, all being adult males and native Mexicans. They entered at different times, but all presented the same character, one foot in each patient being diseased, and all stated that their disease had begun several years previously. They were all in a very emaciated condition, resulting from the local irritation. The characteristics of the diseased parts consisted in a swelling and induration of the integuments, the swelling amounting to double the natural size of the foot, and a fungous growth sprouting out from innumerable apertures of the top, bottom, and sides, the top of the foot being more thickly covered with the fungus than the other parts, and the toes free from the disease.

The sinuses by which the fungus was surrounded communicated with the bones, and generally in a tortuous direction, and having a viscid secretion. The colour of the fungus had various shades, red, white, and even black, the fungus being raised above the surface three or four lines. Many of these growths could be picked out from their respective beds or sinuses, as they had little or no attachments, but many penetrated deep into the bony tissues, forming cavities from which they could not be extracted.

THE HAIR AND ITS CHARACTERS.

Dr. Hofman, in an interesting paper on the "Hair in its Medico-legal and Microscopical Aspects" (*The Lens*), states that the hair of the head is generally round, but when it is curly it is flattened; the transverse section is then oval. The beard is generally triangular, on section, with one convex side. Hair from the genitals is generally oval; sometimes, however, it is triangular, with one convex side. Hair which has been exposed to sweat is sometimes swollen in one part, and so changed in form.

When the hair grows undisturbed, it ends in a fine point: all the hair of a young child is of this kind; so, too, the hair which begins to grow at puberty. This may be a guide as to the age of a person. Hair which has been cut has at first a sharply-defined transverse section; it afterwards becomes rounded and smaller, or frayed out. This may point to the time which has elapsed since the hair was cut. The beard being less frequently cut, is more often split and frayed out. The hair of the female is also generally frayed at the ends.

The shape taken by the ends of the hair depends upon the action of friction and sweat, the former splitting and rubbing off the ends, the latter dissolving the connective substance. The sweat changes the colour of the hair, as in the axilla, on the scrotum, and labia.

The hair of animals usually differs greatly from that of man, though preserving the same general structure. The cuticula has in most animals absolutely and relatively larger cells. The medullary substance differs greatly from that in human hair, the cellular structure being usually evident without any reagent.

ON THE MANAGEMENT OF ECZEMA.

Dr. Bulkley contributes a paper with the above title to the *New York Medical Journal*, May, 1874. True eczema, he states, is a catarrh of the skin, properly acute, but very commonly subacute. The skin is entirely analogous to the mucous membranes, which are but the involuted portions of the cutaneous envelope. This catarrh tends to run a certain course accompanied by certain pathological changes—namely, thickening caused by a deposit of adventitious cells in the rete mucosum, but also capable of extending into the papillary layer, and even deep into the adipose tissues. Much that is called eczema is properly nothing but dermatitis, an inflammation of the skin tending to spontaneous recovery when the cause is removed and irritating agencies are kept away. Eczema in its true sense is not a local affair, but when intimately associated with blood-changes, represented in the main by sub-oxidation or hyper-acidity, as found in the stomach secretions, those of the kidneys, &c.; and, moreover, this state is closely allied to gout and rheumatism. Debility pure and simple does not cause eczema: but it may by its existence prevent either the recuperative process of nature, or the beneficial action of remedies. Eczema being an acute disease, running a definite course, our treatment must consist principally in avoiding irritating elements, favouring the action of the emunctories, alkalining the system, and locally making such applications as soothe an irritated and inflamed integument. The products of eczema, the thickening and scaling, are removed by stimulating applications, and by such pure tonics as act directly on the nerves, and cause absorption through the capillaries; of such remedies as iron, quinine, and arsenic. Arsenic and zinc ointment, while serviceable in many instances, are so far from being specifics for eczema, that their use is injurious in many cases; while in almost every case other remedies either suffice alone, or greatly assist their action.

TREATMENT OF LEPROSY.

Surgeon-Major Dougall (*Indian Medical Gazette*, March) gives the results that he has obtained in the treatment of leprosy with gurjon oil:—

The change the tubercles undergo in the process of reduction is worthy of notice. After the lapse of some time the tubercle seems to become more movable and loose at the base, and it is felt to be softer there than at the apex. This softening process gradually approaches the surface, and at last a watery bleb forms, and this bleb soon bursts and allows a thin serous clear fluid to escape, and a marked diminution is then observed as regards the size of the tubercles as compared with its former dimensions. This may take place two or three times until the tubercle is quite reduced. He found it expedited matters very much to puncture these watery vesicles with the point of a lancet, and it allowed the fluid to escape without pain or inconvenience to the patient, and did not interfere with the rubbing process. He has seen a tubercle on the helix of the ear entirely subside after one formation of this vesicle.

The gurjon ointment, though thoroughly rubbed on the surface of the body for four hours every day, produces no vesications directly from its action, and causes no pain whatever; it seems to be, through its constitutional effects, that the tubercles soften from within outwards. He has rubbed it over his own arm, and it did not cause the slightest pain or redness, though allowed to remain on all night.

The emulsion is not disagreeable to the palate, and at first it had no well-marked influence upon the digestive system; but when the dose was increased to one drachm twice a day it improved the appetite, and at the same time acted as a mild laxative.

It also had a distinct diuretic effect, and the larger dose (four drachms) twice a day caused several large healthy motions—in fact, acted as a powerful diuretic and evacuant.

ABOUT BOOKS.

Harvey and his Times: the Harveian Oration for 1874.
By Charles West, M.D., Fellow of the Royal College of Physicians. London: Longmans, Green, and Co. 1874.

The Harveian Oration has this year been published in a book form that we are enabled to notice here instead of furnishing a report. We have read it with much pleasure, and can say that it gives a good estimate of Harvey from a lofty standpoint. We avail ourselves of the neat little volume to supply a few notes respecting our great medical discoverer.

Harvey was five years at the King's School, Canterbury. He then went to the University, entering Caius College 31st May, 1593. He took his B.A. in 1597, and then went to Padua.

Padua was once a university with 18,000 students—a true republic of letters, and a republic of a most democratic kind. The professors, originally elected by the students, were in Harvey's time still nominated by the University. The different faculties were independent of each other as far as their internal government was concerned, and the ecclesiastical censures which afterwards troubled the life of Galileo did not interfere with his functions as Professor at Padua. Two professors were appointed on every subject, the one a foreigner, the other a citizen of Venice.

Instead of 18,000, there were at the end of the sixteenth century not above 1,500 students; but, in spite of diminished numbers, the old reputation of the place survived, and its old traditions lingered still about it.

Dr. West says: "The old customs had not yet fallen into disuse in Harvey's time. The medical session began on October 18th, the day dedicated to St. Luke, the beloved physician, when all assembled in the church (the bishops and chief clergy being invited) to hear an oration by some doctor or other learned person in praise of the study of medicine, and to urge the scholars to its diligent pursuit; the whole assembly then heard mass, after which the Litany of the Holy Ghost was said; for in those days people held, in profession at least, to the belief—'If any of you lack wisdom, let him ask of God, that giveth to all men liberally and upbraideth not, and it shall be given him.'"

To Harvey, no doubt, the great attraction of Padua was its anatomical school, which then presented opportunities for study greater than any other in Europe. Twice during the academical session, which extended from St. Luke's Day to the Feast of the Assumption, on August 15th, the whole human body was required to be publicly dissected by the Professor of Anatomy. Nor were the means neglected to ensure the fulfilment of this regulation; for it was provided that, if no criminals were executed within the province of Padua, the University should have the power of claiming bodies from Venice, or elsewhere within the Venetian States. Not seven years before Harvey came to Padua, the Venetian Government had built there at its own cost a new anatomical theatre, and had placed over its entrance an inscription commemorating the liberality, as well as the genius of Professor Fabricius, who had built the former theatre at his own expense. Between Fabricius and Harvey a fast friendship seems to have sprung up, or rather that loving relationship which is so beautiful between the youth scarce twenty and the old man of well nigh seventy years.

In his liberality and indifference to wealth Harvey may have followed the example of Fabricius, who contented himself with his stipend, and refused large fees. When grateful patients forced their gifts on his acceptance, he with quaint humour arranged them all in one large room, and wrote upon the door "Lucri neglecti Lucrum," which Dr. West renders—"See what I get by saying No!"

Dr. West remarks that one dares not, in an oration to commemorate Harvey, omit some brief statement of what his great discovery was. It was twofold:—

1. After corroborating the statements of those who had denied either that blood transudes through the walls of the ventricles, or that the pulmonary veins bring back to the left side of the heart air commingled with the blood, he asserts that the left ventricle has no other function than that of impelling the blood brought to it through the arteries, which themselves contain blood and nothing else, not air, nor vital spirit, but blood purified by its passage through the lungs, and so made apt for the nourishment of the whole body; and

2. That while the arteries thus distribute everywhere the fresh pure blood, the veins with which they communicate bring back that same blood, no longer pure, to the right side of the heart, whence it is once more transmitted to the lungs, thence carried again revivified to the left ventricle, and then once more distributed throughout the body, its changes not being those of an ebbing and a flowing tide, but the ceaseless current of an onward rushing river.

Harvey taught the doctrine of the circulation of the blood as early as 1615, when he held the office of Lumleian lecturer, but it was not until 1628, when he was fifty years old, that he gave to the world the full fruit of his labours, in his *Exercitatio de Motu Cordis*, which was published at Frankfort-on-the-Main.

What was the use, the good of the discovery of the circulation of the blood? Four years before the *Novum Organon* appeared, Harvey had anticipated its famous lesson, "Non fingendum aut excogitandem quid natura faciat aut fiat," and had proved beyond the possibility of refutation, what years afterwards he assserted in eloquent words, "That facts cognisable by the senses wait upon no opinions, and that the works of nature bow to no antiquity; for indeed there is nothing either more ancient, or of higher authority than nature." Still, was human life prolonged, human suffering mitigated, as the direct and immediate consequence of the discovery? To both these questions Dr. West admits we must answer *No*; but the *no* must be accompanied by two qualifications

"1st. In the ordinary affairs of human life many things are done rightly, but on wrong, or at least on insufficient, grounds, just as in the world of morals many a man is diligent, or temperate, or chaste, on grounds far lower than the noblest. The seaman still navigated his ship in the main correctly by the stars nearly three hundred years after the use of the mariner's compass was known in Europe, and treatises on the use of the astrolabe continued to appear down nearly to the end of the sixteenth century. The Ptolemaic theory of the solar system was wrong, but it served to calculate eclipses by as well as the Copernican.

"But 2nd. We, with our narrow span of life, are naturally in a hurry for results. What comes not in our own time seems delayed indefinitely, and we feel as little children do when they dig up the ground in their impatience to learn whether the seeds they planted have yet begun to sprout. It was thus once supposed that in the realm of nature effect followed cause in quick succession, and it was little thought how slow is the action of those powers which have by their continuance upheaved mountains, or have hollowed out deep seas. So, too, in the world of intellect the remote consequences of a discovery are long in disclosing themselves, impossible to be foreseen. No gift of second sight showed at the time to anyone the electric telegraph in Franklin's experiment made a hundred and twenty years ago. Harvey admired the skill of the artificer revealed by his researches as it had never been before; but of the practical results of those researches he saw but little; and could never have imagined with what accuracy we can now, thanks to his labours, ascertain the nature and seat of disease in each of the four cavities of the heart itself, presage its course, and even where we cannot cure, obtain at least an euthanasia for our patient, and rob death of half its terrors by depriving it of more than half its suffering."

It would not be just to the author to omit a reference to that part of the oration which speaks of the alleged antagonism between science and religion. Dr. West points out that only the inferences drawn—not the facts themselves—can be opposed to truth, and thus continues (p. 58 *et seq.*):—

"None of us who can remember the first broaching of Schwann's famous theory of cell-formation, but must have been struck by the modifications which thirty years have introduced into the doctrines then propounded. We may take a fact for true as far as our means of observation reach, but it must be with the consciousness that with the increase of those means the truth may seem far other than it did before, as when more powerful telescopes resolved the nebulæ into myriads of stars. Nor only so, but there is many a fact of which we can see a part only, cannot take in the whole of it at once; and hence our notions concerning it must needs be incorrect. Let one person describe the Matterhorn as seen from the Italian side, and another as he viewed it from the Riffel, and it would be hard to recognise in the two accounts the same wonderful mountain. The description, too, would differ, according as the object were looked at when the dense storm-clouds were settling down upon it, or when the rosy vapours of the setting sun were beautifying, though half concealing it, or in the clear sky of early morning when its outline stands out distinct. And so it is, too, in our investigations into scientific questions. If our view be obscured by any prejudice for or against this or that inference, which a fact seems to invalidate or to support, or even if the hues of religious sentiment are allowed to intervene and colour it, we see indistinctly and judge wrongly. It is only the *Lumen siccum*, the pure light of passionless intellect, which shows things truly and distorts them by no refraction. It is thus only that we can inquire into the truths written by God's own finger on the world, and on all that inhabit it. *Sine odio, sine studio*, with no prejudice, no favour, for it is eternal truth we seek after; not shocked, nor scandalised, because other seekers as honest as ourselves arrive at conclusions which do not harmonise with ours, for in matters of science at least 'it is not impossible that truth may have more shapes than one.' Therefore, to quote further the words of the same great master—'Give Truth but room, and do not bind her when she sleeps, for then she speaks not true, as the old Proteus did who spake oracles only when he was caught and bound; but then rather she turns herself into all shapes except her own, and, perhaps, tunes her voice according to the time, as Micaiah did before Ahab, until she be adjured into her own likeness.'

"But many a child knows the alphabet who cannot spell, or spells but cannot read, or reading fluently enough, yet fails to catch the full meaning of the sentence. We must not hold too confidently to opinions which a few years may show to be partial, if not wrong, and may wait patiently in hopes of a clearer vision, as he of old who first saw 'men as trees walking,' afterwards under the Divine touch, beheld all clearly. And it is thus, I believe, and in this spirit, that we shall avoid all danger of dogmatising or of concluding rashly from our most imperfect view of things that come under the cognisance of our senses with reference to those higher things which are beyond our ken.

"There is, indeed, a happiness enjoyed by those who with firm conviction yield to some truths an assent more undoubting than any to which reason alone would lead, and to which none but they can attain. Thus it was that Pascal followed his scientific pursuits, with no solicitude as to the conclusions to which they would conduct him, safe in the 'more sure word of prophecy' to which it behoved him to take heed. But even for those who are not able to subscribe to Pascal's creed, there is yet enough in all the changes of scientific theory and opinion to lead them, when doing battle for some hypothesis that may seem opposed to old beliefs, to bear in mind that after all they may be mistaken, that the ancient creed may have more truth in it than seems. I know of no more wholesome state of mind for the investigation of truth than the ever-present consciousness of the possibility of error. . . . .

"The study of our body, of its wonderful adaptation of means to end, has led all of us to recognise the reign of law, and most of us to see behind the Lawgiver, 'the divine Harmostes who arranges all in such methodical and tunable proportions.' (*a*) And yet we come upon the difficulties—the insoluble difficulties of mechanism, not so perfect but that it might have been more complete; sure to wear out, and in its decay certain to entail suffering—suffering avoidable, unnecessary, which the great Archæus might, had he chosen, have prevented. Much ingenuity has been exerted in the endeavour to explain away these difficulties, and at the same time to resist the conclusion, *Non omnis moriar*, which explains them all.

"But our profession gives us, in its daily exercise, the solution of the problem. We have to do with the spoilt, not with the perfect; the meaning presses on us; we find it in a brief sentence, half of which most are ready to utter with reverence, '*Deus qui humanæ substantiæ dignitatem mirabiliter condidisti*'; 'God who in creating human nature didst wonderfully dignify it;' but two words are still wanting to complete it, *et mirabilius reformasti*, and 'has still more wonderfully renewed it.' These solve the otherwise insoluble equation, these give the answer to the enigma."

MEDICAL OPINION.

OUR DENTAL BRETHREN.

The *British Journal of Dental Science* for July contains the following:—

"We have withheld the publication of this number of the *British Journal of Dental Science* for a few days in the hope, which we are proud to say has been gratified, that we might be able to give the earliest possible announcement of one of the most important events which has occurred in the history of dental surgery in this country within the last fourteen years, viz., the reopening of the College gates, under certain conditions, to those whose professional education commenced prior to Sept. 8th, 1859.

"In September, 1859, a charter was granted to the Royal College of Surgeons of England, empowering that body to examine and grant to practitioners of dental surgery a certificate of fitness to practise—in other words, a diploma. It was left to the College to frame the conditions under which this was to be granted, and in all particulars save one, these conditions were framed with the utmost consideration and wisdom; and even that one exception was, acccording to the views of the time, an advisable and wise restriction. The restriction to which we allude was that the admission to examination, without curriculum, of dentists in practice at the time the charter was granted, was limited to a period of four years.

"The progressive experience of time showed, however, that this restriction acted prejudicially to the interests of the whole body, and we first mooted the question in our leading article for September, 1864, as to whether it could not be removed. Mr. Vasey adopted our suggestion and expressed himself ready to lead a movement in its favour. No definitive steps, however, were taken to carry out our idea, and the whole matter fell to the ground, until in March, 1870, we again mooted the question, and in June, 1870, took the first step towards organising a definite plan of action to attain the desired object.

"The subsequent history of the movement is too long for us now to detail; it will be found at intervals in our pages for the last four years and in a complete form in a pamphlet entitled "The Dental Diploma Question," published some time ago by Mr. Fox. This pamphlet has been regularly announced in our advertising columns, so that no one can now plead ignorance of the movement which has been steadily, if slowly, progressing, to the present gratifying conclusion.

"We will now, therefore, only briefly state, that Mr. Edwin Sercombe having warmly entered into our views, a representative committee was formed under his presidency, consisting of Mr. James Parkinson as Treasurer, and Messrs. Samuel Lee Rymer, Joseph Steele, John Dennant, J. Haslam, W. J. Newman, John Scully, George Gregson, H. T. Kempton, and Charles James Fox, with Mr. Oakley Coles as Secretary; Mr. Elliott subsequently replacing Mr. Haslam, whose loss by death we had to deplore after two years' earnest attention to the work. These gentlemen have laboured together with singular unanimity and steadiness of purpose, and as the result of their labours we are proud to print to-day a letter from the Chairman of the Committee, Mr. Edwin Sercombe, authorising us to publish the petition which has been presented to the

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(*a*) See also the whole of the eloquent Chapter II. of Book IV. of Cudworth's "Treatise concerning Eternal and Immutable Morality," 8vo, London, 1731, especially pages 176-177.

College, and announcing that after deliberate consideration, and on the recommendation of the Dental Board of Examiners, the Council of the Royal College of Surgeons have, at their meeting on July 9th, 1874, granted the prayer of the petitioners.

"It will be seen on reference to the signatures that three or four gentlemen have, in signing the petition, substituted the word 'usual' for 'fair and searching' in the following paragraph.

> "'Your Petitioners therefore humbly pray that your Honourable Council will restore the dental profession to the position it held in relation to the Royal College of Surgeons in 1863, by permitting all those whose dental education commenced prior to September, 1859, to present themselves for examination without requiring them to pass through the curriculum, but *not* without subjecting them to a fair yet searching examination.'"

"Now, in using the expression 'fair yet searching' the framers of the petition certainly thought they were properly characterising the 'usual' examination, and we are given to understand that at no period of their deliberations was there ever any proposal or suggestion that the examination should be modified for any one. Our own views were clearly expressed at p. 75 of our issue for February, 1871, where we state distinctly that—

> "'We do not desire to see any modification in the examination, but simply that no *curriculum* should be required of those who began before 1859.'"

We have received numerous letters from gentlemen who assure us, that but for the necessity, until now, of passing two or three years in London to go through the required curriculum, they would prepare themselves for any examination, if permitted to study at home. It is in this spirit that the authorities of the Royal College of Surgeons have met them; and we trust that their present liberality will be met by a ready acceptance of the conditions, one of which we need scarcely add is freedom from the "vulgar vice" of advertising.

CORRESPONDENCE.

TRAINED NURSES.

[LETTER FROM SIR EDMUND A. H. LECHMERE, BART.]

SIR,—In the July number of the DOCTOR, under the head of "Trained Nurses," you gave some account of the movement which was set on foot some time ago by the Order of St. John of Jerusalem, and which has resulted in the establishment of the "National Association for Providing Trained Nurses for the Sick Poor." As, however, in your article you have made one or two slight mistakes, I shall be glad if you will be good enough to allow me the opportunity to correct them.

In the first place, with regard to dresses and badges, of which we are informed there is a general dislike, I may say that the only peculiarity of dress which our nurses will wear will be the usual dark dress which among all nursing communities is thought to be desirable. The badge will be simply a small white cross, to which even the most fastidious could not reasonably object.

With regard to the object which we have in view—viz., to supply a body of trained nurses for the sick poor, it has been thought undesirable to establish any new or special training school; for it is well known that already many exist in which the best of training can be obtained. Our object is rather to endeavour to supply this great want by making arrangements which will enable us to secure the services of suitable women to be trained in existing institutions for work exclusively among the sick poor. This will be done by paying the cost of their training, and by entering into an engagement with them to serve for a given time in that branch of nursing for which they will have been especially trained.

The action in this matter which the Order of St. John has taken originated in papers which were read on this subject by two eminent men, associates of the Order, at the general assembly in 1872. A committee was formed to inquire into the matter, and a sub-committee of medical men was afterwards appointed to inquire into the subject. This they did, and in their report they stated that they "were unanimously of opinion that the Order of St. John ought to take steps to assist the poor in time of sickness, by rendering available for this service a number of nurses of intelligence and tact, commensurate with the extent of the want admitted to prevail by all medical men conversant with the wants of the poor."

I have the honour to be, Sir, yours faithfully,

EDMUND A. H. LECHMERE.

Rhydd Court, Upton-on-Severn.
July 27th, 1874.

OBITUARY.

ATCHISON.—On the 9th June, Thos. Atchison, M.R.C.S.E., of Gloucester Crescent, Regent's Park, Surgeon-Major, late of the Bengal Service, aged 50.

APPLIN.—On the 20th June, at Manchester, A. O. Applin, M.R.C.S.E., Staff Surgeon-Major Army.

BROWN.—On the 2nd July, Geo. Brown, M.D., of York Road, Hove, Brighton, aged 60

BARRETT.—On the 16th June, at Wallingford, J. S. Barrett, M.R.C.S.E., of Kingston-Bagpuize, aged 76.

BEATSON.—On the 7th June, at Knollswood, Simla, India, George Stewart Beatson, M.D., C.B., Surgeon-General, Medical Officer in charge of the British Forces in India.

BRAITHWAITE.—On the 9th June, at Leeds, Mary, daughter of the late W. Braithwaite, M.D.

BOWKETT.—On the 15th June, Thos. Edward Bowkett, L.S.A.L., of Poplar, aged 70.

BAKER.—On the 28th June, Thomas John Baker, Esq., M.R.C.S., of Junction Road, Highgate Hill, aged 63.

BROXHOLM.—On the 22nd June, J. Horton Broxholm, M.D., of Sunbury, aged 48.

CLARKE.—On the 20th June, Wm. H. Clarke, L.R.C.P.Ed., L.R.C.S.Ed., of Stratford-on-Avon, aged 32.

COTTERELL.—On the 19th June, Peter Ambrose Cotterell, M.D., of West Bromwich, aged 47.

CRAW.—On the 1st July, at Malta, John Craw, M.D., Surgeon R.N., aged 32.

CLARKE.—On the 17th July, at Leahy Terrace, Sandymount, Dublin, Terence Clarke, Surgeon R.N. (retired list), aged 93.

DUFFY.—On the 23rd June, Francis Duffy, M.D., of River-view, Carrickmacross, co. Monaghan.

DODD.—On the 11th July, at Brighton, Elijah Dodd, M.R.C.S.E., of Studley Road, Clapham, aged 68.

DOUGLAS.—On the 25th June, Arch. Douglas, M.D., of Clifton Place, Hyde Park, formerly of Edinburgh, aged 57.

FLETCHER.—On the 27th June, Wm. B. Fletcher, Surgeon, of Rainford, Lancashire.

HARDY.—On the 21st June, H. G. Hardy, L.R.C.P.Ed., M.R.C.S.E., of Willington, aged 48.

HOLDEN.—On the 2nd July, Geo. Holden, M.D., of Lakemead, Totnes, aged 41.

HIRSCHBERG.—On the 15th July, at Paignton, South Devonshire, H. J. Hirschberg, M.D., aged 60.

JEFFERSON.—On the 27th June, Richard Jefferson, M.R.C.S.E., of Market-Weighton, Yorkshire, aged 74.

LYON.—On the 5th July, David Mitchell Lyon, L.R.C.P.Ed., L.F.P. Glas., of St. Helens, Lancashire.

MUDGE.—On the 27th June, Henry Mudge, M.R.C.S.Eng., of Bodmin, aged 68.

M'NICOL.—On the 22nd June, John Clark M'Nicol, M.D., of Clayton-le-Moors, Lancashire, aged 29.

NISBETT.—On the 22nd June, at Lee, S.E., Sir Alexander Nisbett, M.D., R.N.

O'CONNOR.—On the 19th June, T. J. H. O'Connor, L.R.C.P.Ed., of Heyworth Street, Everton, Liverpool, aged 34.

PEDGRIFT.—On the 22nd June, Robert Pedgrift, L.S.A.L., of Loddon, Norfolk, aged 73.

PERRY.—On the 21st June, at Helensburgh, Jane, relict of Robert Perry, M.D., aged 83.

PALMER.—On the 3rd July, Henry Palmer, M.R.C.S.E., of Great Bedwin, Wilts, aged 87.

SINCLAIR.—On the 10th July, John Hartley Sinclair, M.D., of Marine Square, Brighton, late Staff-Surgeon, Army Medical Department, aged 70.

STEEL.—On the 9th July, John Steel, L.F.P.S. Glasg., of Wheatholm, Pollokshaws, Renfrewshire.

SCOT.—On the 25th June, at Laurencekirk, Thos. Goldie Scot, M.D., Deputy Inspector-General of Hospitals.

SMIRTHWAITE.—On the 19th June, Geo. Smirthwaite, M.R.C.S.E., of Coal-Clough, Burnley, aged 55.

STEELE.—On the 11th July, H. C. B. Steele, M.R.C.S.E., of Stoke-ferry, Norfolk, aged 66.

TAYLOR.—On the 22nd July, at 7 Church Street, Wicklow, James R. Taylor, M.D.

THORN.—On the 21st June, R. L. Thorn, M.R.C.S.E., of Buckingham Palace Road, Pimlico, S.W.

WILKINSON.—On the 18th July, at Kingstown, on her 79th birthday, Harriett, widow of the late James Wilkinson, M.D., of Blackrock, co. Dublin

WATTS.—On the 24th July, at The Mount, Shrewsbury, John Watts, M.D. Edin., M.R.C.S., aged 54.

WILSON.—On the 9th July, John Wilson, M.D., of Stoke, Devonport, aged 32.

WOLLASTON.—On the 11th June, at Hollington, near Hastings, Alex. L. Wollaston, M.B., F.R.S., aged 69.

NOTICES.

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THE DOCTOR.

LONDON, SEPTEMBER 1, 1874.

Multum in parvo.

CHRONICLE.

OBSTRUCTIVE ENLARGEMENT OF THE PROSTATE.

Dr. Van Buren, in the *New York Medical Journal*, July, 1874, makes the following valuable remarks on the treatment of the above-named disease:—

He says at the outset that he has no medical remedy to offer whereby enlargement of the prostate may be checked or dissipated. Medicine has thus far proved as unreliable for this purpose as for curing fibroid tumours of the uterus. It is the results which follow, when this enlargement, which we have not the power to control, encroaches upon the outlet of the bladder so as to threaten obstruction to the consummation of a vital function, which will occupy us; and the best remedy we possess wherewith to palliate these results is to take measures to accomplish the removal of the urine from the bladder, just as soon as possible after the natural power has given signs of failing, by artificial means—preferably by the catheter. Commencing with this instrument early, it is to be persevered in with gentleness and judgment, regularly and systematically, until a tolerance of it is acquired by the patient, and until he has been taught to use it for himself—to be in this respect his own surgeon—and to rely upon it entirely for emptying the bladder. This is the course which, in my judgment, promises us the best results in arresting that otherwise inevitable train of symptoms which follows the growth of a mechanical impediment at the neck of the bladder. These symptoms are caused by progressive morbid alterations, at first in the bladder itself, and later in the ureters and kidneys, due to the constantly acting obstruction to free escape of the urine; changes which succeed each other in slow but regular sequence, involving almost necessarily the formation of stone in the bladder, and leading to a fatal issue, attended by an amount of physical suffering we are called upon to witness in no other malady so common to our race.

But for the fear of taxing our patience by enumerating the symptoms to which prostatic obstruction gives rise, and placing side by side with them the series of coincident pathological changes in the urinary organs by which they are explained, he demonstrates that their sequence could be interrupted at once by any means capable of preventing the increased muscular effort or straining which the mechanical impediment compels the patient to employ each time he attempts to pass water.

There would be but one exception to this, namely, the greater amount of blood brought to the neighbourhood of the neck of the bladder by the increasing bulk of the prostate and the effect of its peripheral pressure in causing defective circulation in, and varicose dilatation of the veins of the vesical plexus—all of which favour inflammation at the neck of the bladder. The use of the catheter, brought about in such a way as to occasion as little irritation as possible, would tend directly to arrest the progress of the other morbid changes, namely, the reflex nervous action caused by the presence of the impediment, which is constantly stimulating the bladder to muscular contraction or spasm; the consequent dilatation, pouching, and sacculation of the bladder, and muscular hypertrophy, from the increased force as well as frequency of extrusive efforts which bruises and worries the neck of the bladder very much, as the constant straining in dysentery damages the lower end of the rectum; the secondary obstruction which grows up at the outlets of the ureters where they traverse for three-quarters of an inch the thickening walls of the bladder—giving rise to distension of these tubes, and threatening invasion of the kidney; and, sooner or later retention of the urine, which converts the passive congestion at the neck of the bladder into positive inflammation, and leaves behind it a more or less extensive pus-secreting surface within its cavity, attended by symptoms of catarrh, which, when once established, never again entirely disappear. All these results, he repeats, could be prevented if the use of the catheter were adopted early, and relied upon entirely.

Not unfrequently also a nucleus of lithic acid from the kidney, which is prevented from passing off by a large prostate, becomes encrusted with phosphatic salts. This result, which is classical, involves necessarily the existence of a pus-secreting surface in the bladder. The condition of atony or loss of contractile power is one of the regular sequences of pathological changes following prostatic obstruction. This condition, accompanied by its necessary consequence dilatation, occurs, sooner or later, in prostatic obstruction always, in some degree, although the spasms which not unfrequently accompany the complication with stone would seem to suggest the reverse. The hypertrophied muscular fibres of the bladder become worn out by overwork, and degenerate, more or less, by fatty atrophy. This allows the walls of the bladder to yield to the pressure of the urine, which tends to accumulate in its cavity in consequence of the difficulty of escape through its obstructed outlet. Hence its alterations in shape, especially by bulging toward the rectum at the *bas fond*, and its general dilatation. When, in consequence of very slow and gradual formation of the obstructive growth, little or no catarrhal inflammation and consequent irritability have arisen, there are less hypertrophy and more dilatation of the bladder; and in these cases, through gradual failure of contractile power of its muscular coat, the condition known as atony is liable to be developed in a very insidious manner. The patient passes only a portion of the urine in his bladder, more or less remaining behind.

It is a noteworthy fact that the cases of prostatic obstruction, in which the condition of atony is developed early, suffer comparatively little pain. Such patients are not liable to the spasms which constitute so unpleasant a feature in the advanced stages of the alterations due to obstruction where there is full contractility, or only partial atony.

ON THE ACTION OF CHEMICAL SUBSTANCES ON THE TEETH.

Dr. Foster Flagg directs attention (*Dental Cosmos*) to the difference between the ordinary chemical action of acids upon such salts and organic tissue as compose tooth-structure, and that action which results in caries. Frequent and long-continued experimentation has failed in almost every instance to produce any result which could be considered as analogous to caries; and when, in isolated instances, teeth have been subject to influences, either accidentally or designedly, which have proved adequate to the induction of a semblance of this disease, it has been found that either the concomitant of galvanism in some form might easily be indicated, or that microscopic research has proved the existence of such pathological conditions structurally as would indicate decided local predisposition to decay, if even the incipiency of actual caries had not been announced by decided "tubular consolidation." This latter has been invariably found in the comparatively limited number of examinations of this condition which he has been able to make.

In connection with all the various published results of experiments as to the effect upon teeth of an extended list of so-called injurious articles, embracing the many acids which are in daily use, such as acetic, citric, tartaric, malic, lactic, &c., together with sugar, meats, &c., we remark only the effects noted, day after day, of enamel so altered in appearance as to have lost its brilliancy, or at length so altered in structure as to be easily scraped away with the finger-nail, or again, of dentine and cementum so softened as to be cut or even bent; and yet no particular mention is made of the fact that these results were unlike caries in every particular.

Dr. Flagg has found repeatedly the most beneficial effects produced by the administration of medicines which, used locally in the seemingly accepted method of experiment, would be disastrous in the extreme; for example, nitro-muriatic acid will be recognised as eminently destructive of tooth-issue. He has not seen a case of dental caries which he could attribute to the use of any acid medicine, while he has again and again seen remarkably prompt cessation of dental tenderness and tendency to caries, resulting from local weakness of tooth-structure consequent upon long-continued biliary difficulty, from the administration of fifteen to twenty drops of nitro-muriatic acid daily.

It has for many years been accepted by observant dental practitioners that teeth are injured to a certain extent by the long-continued use of acid medicines; but it has also been noticed that the injury is general, that enamel suffers most of all dental tissues, that it loses its brilliancy and density of structure. The injury is not, he says, prevented by taking the medicine through a glass tube. He has taught that such injurious action as was liable to ensue from acid medicaments should be prevented by rinsing the mouth thoroughly immediately after swallowing the medicine, with water, to which had been added a few drops of solution of ammonia, or a small quantity of bicarbonate of soda.

Solutions of alum are injurious in a general way only, acting more or less severely according to frequency and continuance of applications and strength of the solutions; these roughen and soften the enamel, and necessarily accelerate the progress of decay in already formed cavities, but never seem to cause decay of the teeth in the circumscribed and localised manner which pertains to dental caries.

INFLUENCE OF BICARBONATE OF SODA ON DOGS.

IN the *Berlin Klin. Wochenschrift*, Dr. Lomikowsky has stated that the above influence consists especially in a modification of the intestinal canal, with enlargement of the Peyerian and solitary glands. This latter effect depends on hyperplasia of the lymphoid elements, and is likewise observed in the spleen, which also becomes larger. The liver, subjected to a temperature of 15 degrees (Réaumur) during a few hours, showed no traces of sugar, though in all the cases the presence of glycogenic substance was found. If, therefore, we admit that this substance is converted into sugar in the liver, we must conclude that alimentation with bicarbonate of soda leads to the disappearance of the ferment which determines the transformation.

THE HYPODERMIC INJECTION OF QUININE IN TYPHOID FEVER.

DR. RAVICINI, writing in the *Rivista Clinica di Bologna*, January, 1874, recommends the hypodermic injection of quinine in the treatment of typhoid fever. He uses a solution of 5 grammes of sulphate of quinine in 50 grammes of distilled water, and injects 10 centigrammes of hydrochlorate of morphia.

Under this treatment, Dr. Ravicini says, the sordes disappear from the mouth and teeth, the headache, meteorism, and gurgling in the right iliac fossa are greatly diminished, the spleen is reduced in size, and the countenance becomes more composed. He does not believe that the quinine at once cuts short the course of the disease, but that it favours its disappearance, since he has seen nearly all his patients convalescent at the end of the second week, or at most, of the third. It is only when the disease has not been treated from the beginning that it has been prolonged beyond the third week. The quantity of the above solution is 1·70 c. three times a day, and the morphia Dr. Ravicini believes to moderate the symptoms of nervous disorder which are so constant in typhoid fever.

ACTION OF QUININE ON THE CEREBRAL CIRCULATION.

AT a recent meeting of the New York Neurological Society a paper was read by Dr. Roosa, upon the "Etiology and Treatment of the Diseases of the Internal Ear," in which he referred to the action of quinine as a remedy. He asserted that when given where congestion of the internal auditory apparatus already existed, quinine would aggravate the disease, and therefore produce cerebral congestion.

Dr. Jacobi did not agree with Dr. Roosa, but contended that quinine produced cerebral anæmia, and therefore it was a proper remedy to administer in that condition of the auditory apparatus spoken of.

Dr. Hammond agreed with the first-named gentleman; but, in order to test his convictions, he experimented upon himself, assisted by Dr. Roosa. Before the experiment was begun, his ears and eyes were examined by the auriscope and ophthalmoscope, and found to be in a normal, uncongested condition. He then took quinine, with the results anticipated. The blood-vessels of the tympanum and retina exhibited marked congestion. A dog was also experimented upon. After trephining the skull, quinine was given. A tube was then inserted into the opening. At the lower end of this tube a very thin membrane had been placed, and in the tube a coloured fluid. The apparatus being inserted into the skull so that the thin membrane would touch the dura mater, a short time after the administration of quinine the fluid began to rise, and continued to rise for several hours, when, as the influence of the quinine began to disappear from the system the fluid in the tube began to descend, until it finally settled down to its original position, showing most conclusively that the action of quinine upon the brain is to induce a greater amount of blood to flow into it, thereby producing congestion, and consequently leading one to infer that the theory of Dr. Roosa is correct.

The editor of *New Remedies* states that subsequently Professor E. G. Janeway examined the circulation in the meningeal vessels of a dog by means of a high power, and in the course of the examination administered to the animal a dose of quinine. No apparent change could be detected in the size of the vessels or the amount of blood circulating in them.

DETECTION OF ALCOHOL IN ORGANIC FLUIDS.

THE following is M. Bertholet's new method as stated in *La Tribune Médicale*:—When placed in presence of water, cold or tepid, benzoic chloride ($C_{14}H_5ClO_2$) decomposes very slowly. But if alcohol is added, benzoic ether is immediately formed, and precipitates into the chloride in excess. The presence of the ether becomes manifest when a few drops of the liquid are treated with a solution of caustic potash; the chloride alone is dissolved, and the ether remains untouched. This reaction is very marked with a liquid containing 1 per cent. of alcohol, and permits the chemist to dispense with distillation.

GLUTEAL ANEURISM.

IN his lectures this year at the Royal College of Surgeons, Mr. Timothy Holmes thus summed up the conclusions to which present experience seems to him to point in the treatment of gluteal aneurism:—

1. Gluteal aneurisms, both traumatic and spontaneous, are very favourably circumstanced for the treatment by either rapid or gradual compression, applied to the aorta or common iliac.
2. If this treatment does not succeed by itself, it may be supplemented by coagulating injection or galvanopuncture, performed while the patient is narcotised and the circulation commanded.
3. When such treatment fails, and particularly in aneurisms with imperfect or ruptured sacs, where it is not indicated, the internal iliac must be tied when the surgeon thinks that he cannot find the artery outside the pelvis. But when the artery is accessible, the old operation, or the operation of Anel, should be practised, according to the size and extent of the tumour.
4. The ligature of the internal iliac artery is liable to failure in cases of spontaneous aneurism from a diseased condition of the coats of the artery, and should always be avoided when other means of treatment are available.

TOPICS OF THE TIME.

THE ELECTROLYTIC TREATMENT OF CANCER.

DR. ROCKWELL lately read a paper on this subject before one of the New York societies. After considering the treatment theoretically he relates a case in which, on June 12, 19, and 28, 1873, he operated by the ordinary method of electrolysis, on each occasion introducing three needles. These efforts merely resulted in a softer condition of the tumour, with possibly some slight diminution in size, and he determined to extirpate the growth, and to destroy the surrounding tissue by the undermining electrolytic process. The patient went to her home, and in October she returned to submit to the radical operation. Instead, however, of this, Dr. Rockwell called in Dr. A. B. Crosby, who on the eighth day, after the patient had been thoroughly etherised by Dr. N. B. Emerson, quickly removed both the breast and the enlarged gland of the axilla.

Dr. Rockwell had at hand an appliance consisting of some twenty points, projecting from a metal plate an inch and a half long, by an inch in width.

This contrivance, which may be termed a small harrow, was placed on a portion of the surface of the wound, and the operation was continued.

The needles penetrated somewhat into the exposed tissues, and the electrolytic process, which was at once begun, gave evidence of its usual activity. Hydrogen was developed in abundance, and the tissues changed in colour and consistency, and rapid and complete destruction followed to a considerable depth. By this method the whole of the freely exposed surface was worked over and destroyed, and those portions that were more or less hidden were treated by two or three ordinary electrolytic needles. It was necessary to observe some caution in the regulation of the strength of the current and the position of the poles, for when the current was increased above a certain point, or, through the position of the poles, affected too directly the pneumogastric nerve, the heart's action became most markedly lowered both in frequency and force. On modifying the influence of the current, however, the circulation became as strong as usual—for a moment, indeed, there was an increased vigour in the reaction. The suppuration, which was quite profuse profuse for a time, was followed by a healthy granulating surface, and in ten days the patient was sufficiently recovered to return to Va., where the healing process progressed favourably throughout.

The points of particular interest and the thoughts suggested by the above case are thus summed up:—

"*First*. Treatment by the ordinary method of electrolyzation resulted only in a slight diminution in the size of the tumour, and it became evident that decided reduction was not to be expected in any reasonable length of time. One of two methods of procedure have generally been attempted in the treatment of cancer by electrolysis; either a few needles have been introduced through which a current of moderate tension is passed, but insufficient to excite the ulcerative or suppurative process, or else a greater number have been introduced and a current of sufficient strength used to effectually destroy the parts upon which it acts. By the first-named method the process of absorption is in some cases excited to a marked degree. Non-malignant tumours, goîtres especially, are sometimes dealt with most effectually. A goître of considerable size and of long standing on the person of a young lady, referred to me by Dr. J. Marion Sims, was completely dissipated by the feeble electrolytic effects following a dozen external applications. The case of a patient at Bellevue Hospital, whom I treated for scirrhus, illustrates the remarkable power of electrolysis to excite absorption. It has been referred to before, but I am impelled to speak of it again on this occasion, since the ultimate fate of the patient is now known—dissipating the hopes that attended the case. I operated in the amphitheatre of the hospital, using four needles and a comparatively feeble current. No ulceration was excited, but the tumour began to decrease in size, and in a week's time was one-half its original bulk. A second operation was followed by a still further decrease in size. The patient then left the hospital and for many months was lost sight of, and we were led to hope that the absorbing process had gone on to complete dissipation, but she subsequently returned and died of the disease in a remote organ. From my own experience, then, and from what I can learn of the experience of others, it would seem reasonably certain that we are not, as a rule, to expect much that is favourable in the treatment of cancer, by attempting through our present knowledge of electrolytic methods to excite the process of absorption.

"The *second* method—that of introducing a large number of needles and using currents of great strength—has been occasionally attempted, and encouraging reports have been made.

"Sufficiently well-authenticated accounts of cases brought to a successful issue in this way are, however, it seems to me, wanting. It would be far better to introduce the needles around its base, or, better still, by means of one long, narrow, double-edged blade, to transfix the growth, or rather, transfix the sound parts below the growth, and then, partly by the cutting edges, and partly by the chemical action of the current proceeding from the edges, to remove the tumour at one operation.

"The method adopted in the above case, however, seems to me to be superior to either, from the fact that although two distinct operations are performed, less time is consumed in the operation, and it is possible more effectually and to a greater depth to destroy the underlying tissue.

"*Second.* It is worthy of note that the application of the current seemed to be stimulating in its effects. When applied so as to affect too directly the heart, it is true that the heart's action became weakened, but the moment the tension of the current was lessened, or the electrodes removed to another part, the pulse became fuller and stronger.

"*Third.* The healing process was rapid and healthy in all its progress, and the health and strength of the patient, which before the operation were by no means robust, were not at all impaired subsequently. The operations, in short, were followed by no greater prostration than if the knife alone had been used.

"I do not present this case as of special importance, further than as it is an illustration of a somewhat new method in the treatment of cancer, founded on the reasonable assumption that it may primarily be of local origin.

"The disease may in our patient manifest itself again after a comparatively short period, as it is barely possible that its reproductive power may have been destroyed and the disease overcome.

"The first appearance of the growth was many years before; it had been enlarging for nearly two years, and one of the axillary glands was involved; hence it cannot be regarded as typical of cases on which it would be desirable to test this method through a series of years.

"So long as we are able to do so little towards the radical cure of cancer, it can never be amiss to refer to any means which will even for a time relieve the awful agony that so frequently attends it.

"It is not sufficiently understood by the profession what a magic influence an intelligently directed application of the constant current exercises, as a rule, over the throbbing pains of scirrhus, especially of the female breast. The woman at Bellevue to whom I referred had suffered most severely for many weeks. After the first introduction of the needles every vestige of pain left her, and during the two weeks that she was under observation, before leaving the hospital, she was entirely comfortable. A number of similar cases might be recorded, but I will offer only the following, which is perhaps of more interest than the majority.

"In February, 1873, Mrs. ——, a patient of Dr. Everett Herrick, came to me, seeking relief from an immense ulcerating cancer of the breast. The tumour had been removed more than a year previously by Dr. W. H. Van Buren, but the wound did not entirely heal, and, a few months subsequently, the ulcerative process began, and steadily progressed. For many months the pain from which she suffered had been of unusual severity.

"By the advice of her physicians, above-named, she was submitted to localised galvanisation of the sound portions surrounding the ulcerating part, and by frequent applications the intense pains were for nearly four months held in almost complete abeyance. At times, however, her sufferings were most intense, and words fail to express the instantaneous and absolute relief that invariably followed the treatment. I would occasionally find her in the morning suffering most acutely. An application would dissipate the pains, and for twenty-four hours frequently, and some times for forty-eight, she would move about and rest in perfect comfort. In the latter part of May it was observed that the current did not afford the same relief as formerly. The character of her sufferings had, however, changed. In place of the sharp, shooting pains simulating neuralgia, the distress consisted in a constant burning and itching, which annoyed her more or less until her death some few months subsequently. It must be remarked that her later sufferings were not to be compared with those which the current so effectually allayed.

"Was the change in the character of her pains the result of the galvanisation, or is it probable that, if left to nature, the characteristic neuralgic pains would in the same way have been replaced by the less distressing symptoms of itching and burning?

"It is impossible to say, but it seems reasonable to attribute the changed action to the influence of treatment. It is proper to say that, during the course of treatment, I operated in the presence of Drs. Van Buren and Herrick, by both the galvano-cautery and electrolysis, with the vain hope of modifying in some degree the profuse and offensive discharge and checking the rapidity of the ulcerative process. This case was alone sufficient to teach the necessity of care in the application of electricity, and to confirm the statement that it is not so much electricity that relieves and cures as the method of using it. An application too prolonged, or with a current of too great tension, would not only fail to relieve, but on the contrary decidedly aggravate the distress. The cathode, applied to the seat of pain, did not relieve as did the anode.

"The pain was for some time overcome by simple localised galvanisation, but during the last weeks of treatment the applications were effectual only when the electrodes were separated as far as possible."

DR. BROWN-SEQUARD ON NERVOUS FORCE.

In the July number of the Doctor appeared the substance of a lecture by Dr. Brown-Séquard on the cerebral power in man. The *Missouri Clinical Record* has since published an equally interesting lecture on "Nervous Force," delivered as one of a series, at the Lowell Institute, Boston. Dr. Brown-Séquard gives expression to views which are full of importance—thus, he declares that the various effects produced by nervous force are certainly, even for persons who have nothing whatever to do with medicine, full of interest. He has no doubt that persons who have not at all engaged in the medical profession could do more perhaps than physicians, in regard to discovering certain of the peculiarities of nervous force, physicians, unfortunately being biased. They have received an education which has given them certain notions, and those notions prevent a free examination of certain questions. The unbiased minds of persons who have not studied medicine, or who, if they have studied the foundations of it, have not engaged in the practice of the profession, permit them to investigate and discover.

Some of the elementary questions of physiology were touched very rapidly. Thus, the Doctor remarked that there are two elements in the nervous system which are united together, but which are, however, absolutely distinct, the one from the other. One consists in the nerve cell. That cell has starting from it a number of filaments. In the spinal cord and in the brain those cells generally have one element entirely different from the others, and that element is similar to the other element we find in the nervous system—that is, fibres. There are, therefore, two kinds of elements in the nervous system, the fibres and the cells, with their prolongations. What becomes of those prolongations is not known, and it may perhaps remain always unknown to us in this world. It is to be feared that the power of our microscopes will remain pretty nearly what it is, and if that be the case, then we shall never know much more as regards the ramification of those fibres. But the remarkable point is that the fibres of the nevous system are united with those cells. Within the nervous centres, that is, the brain and spinal cord, there is but one of these fibres united with cells. In other parts of the body there are cells which have two real fibres starting from them besides the ramifications.

Nervous force, or nerve force, is that force which manifests itself in nervous actions. "The nerve force," said the lecturer, "belongs only to the elements I have described. Are there any instances in which we can find nervous force without the existence of those two elements? This question is now decided in this way. There are animals in which, and there are circumstances in man in which, the nervous tissue does not exist evidently in the way I have described, and still there is a nervous force; so that it appears that nervous force can exist without the nervous elements." There are conditions, especially in monsters, where the spinal cord, instead of being organised, is a fluid in which elements resembling those of the nervous system are not organised, and still there is nervous action, and, therefore, nervous force. In some low forms there are also tissues which do not represent at all the known elements of the nervous system, but in which nevertheless, there is nervous action, and therefore nervous force. A professional friend in Paris has shown that there are certain instances of disease in man in which the nervous system is so transformed that it is hardly recognisable, and yet there is every probability that it acted, and that nervous force was manifested.

DEATH-BLOW TO ANIMAL MAGNETISM.

"But the great question is not there. The great question," continued the lecturer, "is whether the boundaries of the nervous system are also the boundaries in health of that nervous force. In other words, can the nervous force spring out of the nervous system to produce some action? As regards this, I may say that there are no facts to prove it. You can easily understand that if I am right, this is a death-blow to what is called animal magnetism. But this is a point that we will debate more at length by-and-by. All I wish to say in this introductory lecture on this point is that there is no likelihood at all that nervous force can get away from the limits which are constituted by nervous tissue. There is no question, however, that nervous force can manifest itself outside of the boundaries of the nervous system; but it manifests itself often after having been transformed into another force. It is well known that nervous force is transformed into motor force. This I am doing at present. It is owing to motor force that I have any voice at present. This transformation into motor force takes place at every moment of our lives. Other transformations are also of great interest. You well know that there are fishes that possess an electric apparatus. In them the nerves which go to the electric apparatus are enormous. And those nerves convey nervous force, and not electricity. As soon as the nervous force is felt in that electric apparatus, electricity is evolved. Electricity is a transformation in that case of nervous force, just as we know that heat can be transformed into electricity or electricity into heat, heat into motion, and motion into heat, &c. There are animals which are phosphorescent, and which are so under an act of their wills, so far as we can judge, and under the influence of the nervous system; so that light also can be evolved as a transformation of nervous force. There are cases of consumption in which light has come from the lungs. The fact has been pointed out by Sir Henry Marsh and other physicians. The light appears not only at the head of the patient, but it may be radiated into the room. It has been considered that the light was only a peculiar effect of the mucus that came from the lungs of the patient. It is not likely that this is the case, because mucus in greater quantity is evolved, and all sorts of mucus, from the chests of the people, every day, without any such phenomenon. I have read the history of each individual case of the kind so far as I have been able to get it, and in every one of the cases the patient, I find, was in a terrible state of nervousness, so that I cannot but believe that the production of light was, in a measure at least, owing to the transformation of nervous force."

"HEAT, ELECTRICITY, AND NERVOUS FORCE.

"There are great transformations also of another kind. You well know that nutrition, which implies chemical change in our system, as well as secretion, which also requires chemical change, may take place under the influence of the nervous system. I shall show this more fully in a subsequent lecture. When this transformation occurs, it is quite evident that it is the nervous force that has been transformed into a chemical agent.

"Is nervous force ever transformed into heat? There is no doubt whatever that heat is evolved from our system, and in a great measure owing to the action of nervous force; but the question is whether it goes through other transformations. This is a point which it would be very interesting to determine, but which at the present state of our knowledge is not yet ascertained.

"Now that we have passed in review all those facts showing that nervous force can be transformed into the other forces of nature that we know, almost all of them, the question arises, 'Can all the forces of nature be transformed into nervous force?' This is one of the greatest questions that we could undertake to consider. Unfortunately, the elements we have for solving it are as yet very few. We do not know positively yet—at any rate I do not know, and I have read considerably to find if the question is solved—we do not know positively yet whether electricity can be transformed into nervous force. You can easily understand that if it were possible to have such a transformation, a great many weak people would receive manifest advantage in being galvanized. Therefore, the question is of great importance. There is no doubt at all, for this has been established by a good many experimenters, that the elements of the nervous system benefit in their nutrition under the influence of electricity and galvanism; but a direct transfer of electricity into nervous force is not yet proved.

"As regards light, very little is known. You well know that nervous disturbance will come from the action of light. There is no doubt whatever about it. Light is certainly a very powerful agent, and a most useful one. Indeed, it is rather too much forgotten that light is almost essential to life; but we do not know if there is any direct transformation of light into nervous force. It seems to be so in the retina; but I cannot employ any other phrase than the phrase 'it seems to be.' It would not appear to be difficult to solve the question by experiment, and a solution would be of considerable importance.

"There are other forces which certainly are transformed into nervous force. There is no doubt as regards motion. Motion increases nervous force in the limb without the least doubt. What the French call *massage*, which is shampooing, pounding or kneading of the flesh, increases nervous force without doubt. But there is some little doubt whether it is not through an improvement of nutrition, through a chemical change, that the influence takes place.

"There are other forces, heat, for instance, which perhaps are transformed into nervous force. The application of heat to children is exceedingly useful to help their development. If the air they breathe is cool, and heat is applied to their limbs, but not so much to their body, they certainly grow faster. There is no question that in northern climes children who are not well clad, and are not well cared for in regard to the heat surrounding their body, do not grow so well as children who are submitted to the influence of heat. There is one thing which in this country especially is most hurtful and dangerous, and that is heat applied to the lungs. It is perfectly well known that the mortality of children in this country is enormous in the summer months, and that chiefly through the influence of heat on the lungs and on the belly. Digestion and respiration are disturbed, and death comes, as you know, too frequently. More care could be easily attained in that respect, and it may be that I shall have a chance to speak of it in one of the last lectures of this course.

"A DEAD OX KEPT FIFTY-SIX DAYS WITHOUT PUTREFACTION.

"Some physiologists have considered that nerve force is nothing but that which many physiologists admit under the name of vital force. The theory which is most important in this respect has been put forward by M. Flourens. He considers that a spot in the medulla oblongata is the focus of vital force. There is, you know, a spot which is pierced by the matadors in Spain when they wish to kill a bull immediately. Death occurs instantly. The kind of death is a very interesting one. When we perform the experiment in the laboratory we find that the animal is so instantaneously and so effectually killed that there is no struggle whatever. The animal lies there, apparently having lost every vital power, and it is certainly a great question to know what becomes of the nervous force in those cases. It seems to have been lost altogether. I say it *seems*, for if we examine a little further we find that it is only dormant. It is accumulated in certain parts of the body in immense quantity. The nervous centres have lost it almost altogether, but the nerves are quite rich in nervous force, so much so that I have kept one of those animals for nearly fifty-six days in my laboratory without any trace of putrefaction, and at a temperature which varied between 45° and 65°. The lack of putrefaction depended certainly on the long persistence of nerve force after death. There is in these cases a great mystery, however. This nerve force we can detect very easily. If we galvanise a limb we find that there is a nerve force there, and that for a long time after death. But how is it that it suddenly disappears from the nervous centres, so much that respiration, circulation, and all voluntary and involuntary movements cease? To answer this question would require no little study and investigation, and the person making it would have much to find that would be interesting. We find, however, in making these experiments that we can take away the part which has been considered as the focus of life, by employing certain simple precautions, without destroying life. At the College of Surgeons in London, in one of my lectures there, I had tried to show that death in the cases referred to is immediate. I had an animal—a guinea-pig—on which the experiment was to be performed. In making the experiment my knife slipped and went all around the part, carrying away more than I had intended. The pig survived three or four days, and my boy, trying to make the pig squeal, drowned it. The vital focus, so-called, does not deserve the name; for there are many cases in which it has been destroyed, and life persists. Therefore we cannot look upon it as being a centre for vital force or nervous force.

"This leads me to examine now the question, What are the places of production of nervous force? Those places of production, I may say, are as extensive as the nervous system. For a long time physiologists had considered that the cells were the only parts that produced nerve force. But I have ascertained and proved, and I think most physiologists now admit, that nerve fibres can also produce nerve force. In experiments consisting in injecting blood into a limb which has been separated from the body for a long time, I have ascertained the nervous force which had disappeared has been reproduced. So that it is clear that nerve fibres can engender nerve force. If we separate a nervous centre from the nerves we find that in four days the nerve has lost its power altogether. It seems, therefore, that something came from the nervous centre which was useful in the production of forces there. But it is clear, too, that there are other forces reproduced in the part. If we allow the part to receive more blood the injection will reproduce nervous force again. I have kept a nerve alive apart from the body for forty hours by injecting blood into it. The nerve force, even in the brain, can be invigorated when the brain has lost all power and is separated from the body. An injection of blood reproduces nerve force again, and all the activity of the brain when in the animal is found to be manifested. In one case, that of a patient of mine, who had had a dissection of a nerve, the nerve continued to act spontaneously for four days, and the muscles to which that nerve went were in contraction for the same length of time, owing to the persistence of life and action of that nerve separated from the brain. After four days the transformation which we know can take place in the nerve tissue had destroyed nervous activity, and the muscles then remained quiescent, completely deprived of action.

"There is an organ in the body whose functions have been very much discussed. That organ is the cerebellum. In man it is a very large organ indeed. I shall not discuss its functions here, but I will say that there is no doubt that the cerebellum is one of the principal foci, one of the principal places where nervous force is produced. In many animals the principal place is in the spinal marrow. But in man the cerebellum is the great focus of the production of nervous force.

"POWER OF OXYGEN, STRYCHNINE, AND THE WILL.

"What is, now, the agent of production of nervous force in our blood? It is clear that blood itself must be necessary to the production of nerve force. Still, for a time, the oxygen alone which is carried by the blood may suffice. Oxygen, even when the blood seems to have been taken away altogether from the part, can give some nerve force to the nervous system; but there is a medicinal agent which has immense power in producing nervous results. When the spinal cord of a frog has been washed of every drop of blood, when injections have been made of pure water so as to carry away every particle of blood, if strychnia is put on the spinal cord, in a very short time the amount of 'reflex power,' which is a manifestation of nerve force, is very much greater than it was before, showing that strychnia had increased that power. This is the only fact we know, which clearly proves that a medicine, putting aside oxygen, can have such a power, and a power, indeed, which is very great.

"What is the power of our will on the nerve force? This is a question which a great many patients every day ask themselves. There is no doubt that nerve force is very little under our will. It may be an admirable provision of nature. It may be that we would spend it very foolishly, as we do spend many other things. Still, there are circumstances when the deficiency of will power is really painful, and in patients in whom the amount of nerve force is immense. I have tried to measure the amount of nerve force in a frog. I have ascertained that a frog could lift a weight of twenty grammes to a point which was about a line and a quarter, 600 or 700 times in an hour and a quarter. This is an immense amount of nervous force, and manifested, too, when the spinal cord was no more receiving blood, when there was no more circulation. In this case the frog was beheaded. Compare this with the case of a frog having its head. The frog with a head, after a very short time, could not move at all wilfully; while still the reflex action, as we call it, an irritation of the skin, determined a strong movement. There may be, therefore, in certain circumstances, an immense amount of nerve force accumulated in the system. I would not say that there is no more production immediately after the cessation of circulation. I had not washed the vessels. There was blood left there; still there was not much of it, and it was not charged with oxygen after a time.

"There is an immense difference as regards the amount of nervous force that remains in the system after death according to many, circumstances, and especially according to temperature. If we have considerably diminished the temperature of animals having a great heat, such as we have, and we then kill them by means that will not bring on convulsions and an expenditure of force, we find that the amount of force that remains is considerable, and that it will remain there a very long time. In cold-blooded animals, when the temperature is very near freezing point, the amount of nerve force that remains in them for a very long time is also immense, while at high temperature the transformation of nerve force into chemical force is very rapid, and then the expenditure of nerve force is total after a time, which is not very long.

"The principal question I have to examine in this lecture, however, is the one I shall now speak of—namely, is there unity of force or only one nerve force, or are there many in our system?

"I have for a long time tried to prove that there is unity of nerve force. If we spend force, either in the way I am now doing, by mental more than by physical labour; if we spend force with the pen in hand, when we are studying quietly at the table, we find, after having been at work three or four or five hours, that the nerve force that remains for physical exercise is diminished. We have drawn force from a focus which is the same that gives it for mental action and for physical exertion. If, on the other hand, we walk twenty miles and find ourselves physically tired, we find then that very little nerve force remains for mental action. There are facts, however, which seem to be in opposition to this, and those facts will be fully explained in the last lecture, when I come to explain the laws of production and expenditure of nervous force. I may say this much, however, just here, that it is perfectly well known, contrary to what I have said, that we can do no better with our brain if we have had some exercise than if we have had no exercise at all. But it is simply that a certain amount of exercise has led to the production of nervous force by improving the circulation, improving the secretions, improving respiration, and improving, in fact, all the great organic functions through which the secretion of nervous force takes place, so that we have become richer in our force because of the exercise we have taken physically. There is no doubt, therefore, that moderate exercise will lead to a production of nerve force and facilitate the exercise of the brain power; and there is no question that if we draw too much of the nerve force of our system, if we draw a great deal more of it than can be reproduced during a certain time; if we walk, for instance, very fast for five or six hours, we are then unfitted for mental work and for a good many other things. Our respiration becomes difficult. Our heart, after having beaten with much rapidity, comes to beat very slowly. We are weakened in every organ whose action depends on nervous force. There is no doubt, therefore, that there is a common focus of nerve force on which we draw for any of the activities of our system employing nerve force. Looking through a microscope for several hours, as micrographers know full well, is a cause of great fatigue, and renders mental work or physical labour thereafter more difficult.

"THE UNITY OF NERVOUS FORCE.

"There is one experiment that shows that nerve force is distributed as galvanism would be on a cylinder. Suppose a cylinder in the shape of an arm; suppose that this is charged with a certain amount of electricity, and suppose that this arm or cylinder is then cut in two just in the middle of its length; there would be in each half of the arm then an amount of electricity which would be just one-half of the amount that existed before. Suppose that the whole arm had manifested a force equal to twenty measures, the half of the arm would manifest a force equal to ten. So it seems to be with the nervous system. If we divide the cord across, as in a bird, behind the upper limbs, we find that the bird cannot make use of its limbs as before. The amount of force is not sufficient in the upper part of the nervous system. So it seems that nervous force is distributed all over the nervous system, and that if a cause operates to divide the nervous system into halves, each half has only the amount of nerve force which it had before.

"There is one objection in appearance to the view that there is unity of nerve force, and that is that the brain is a double organ; that we have two brains instead of one. About that, allow me to say that although we have two brains it is pretty much as if we had but one, as by the force of our education one only is raised to power. The other is left with very little power indeed. It would be very easy, as I may hereafter show, to develope fully the power of the two brains by proper education. But if we have two brains there is no objection to the view that there is a unity for the nervous force. It is no objection because these two brains are united. There is communication. Every part of our nervous system is in communication with the other. We cannot touch a part of the skin or any other part of our system without producing a commotion all over the nervous system; in the same way that we cannot stamp our foot on the ground without shaking the whole world, and not only our world, but the rest of the universe is shaken by such a simple thing as that. Of course, a very little shaken, but shaken nevertheless. There is no doubt that any action on any part of our nervous system is felt everywhere through it. And that is the reason why so many persons suffering in their nervous system cannot have an excitation brought on any part of the body, as it increases the trouble where it exists.

"A few questions remain to be answered before closing the lecture. One is, how happens it that there are so many differences in sensation if there be but one kind of nerve force? This is not a great difficulty. The variety of sensations has no organic cause, of which I may have an opportunity to speak in another lecture. The nerve force is only an agent, most likely the vibration of a certain agent, and the vibration according to the location will produce one effect or another. The parts of the nervous system are not all alike; they certainly differ one from another, and the vibrations may be greater or less, so that we can easily be reconciled to the variety of sensation, although we admit but one kind of nerve power.

"There is another question. That certain fibres seem to act on muscles, and others seem to restrain the nervous action. This is a point of such great importance that I shall give a whole lecture to that subject. When cells are active, either morbidly or naturally, an irritation coming from a nerve and acting certainly through nerve forces may be sufficient to stop the power of that nerve cell. That seems to be an act completely different from that by which a muscle, for instance, is put in action by the vibrations taking place; the transformations of nerve force taking place in the nerve, and also all the other actions that I spoke of—the emission of light and electricity. All these things may seem to imply some different action. But if you admit the great doctrine which exists now in science, and which has revolutionised natural philosophy as well as chemistry; if you admit that there is never a loss of force; that force is accumulated and that it is only transformed when it disappears, then you can easily admit that nerve force has been transformed in those various organs into some other force, and that there lies the cause of the different actions of which I have spoken. But the difficulty exists, however, for that special case in which an action ceases in the cell. Suppose a person to have an attack of epilepsy. His head is thrown to one shoulder and he has not yet lost consciousness, and some one comes and draws the head to the other shoulder and the fit ceases. Well, there has been in that case an irritation starting from certain nerves when the head was moved, and this irritation goes to the cells of the grey matter that were active in producing the convulsions and stops the action of those cells. But the stopping of the action of cells is something different from the production of action. Therefore it may seem quite different. But we may admit, however—and it would be most important indeed for chemists to make researches in that respect—we may admit that a chemical change is the result of that transformation; that the nerve force is transformed into a chemical force, and that chemical changes occur in the cell, very rapidly and in great quantity, just enough to replace the whole amount of nerve force that was acting before. Therefore, there is no reason *à priori* not to admit the possibility and the probability that nerve force is the same in every instance; that it affects cells of grey matter to stop them in the same way that it can put cells into activity; in the same way that it can put muscles into activity, and that it can put an organ into activity."

SPECIAL DEPARTMENT.

REPORT ON ELECTRICITY.

An abstract of a course of lectures, delivered at Charing Cross Hospital by Dr. Poore, has appeared in the *Lancet*. The most practical part relates to the methods of using electricity.

Dr. Ppore said the dry epidermis is so bad a conductor that it may almost be considered as an insulator, and to increase its conductivity it is necessary to moisten it. If two rheophores be placed on different parts of the body, and if a current of a sufficient strength be employed, the skin having been previously well moistened, the current will travel through the body from one rheophore to the other. The current, galvanic or faradaic, entering by one rheophore, having once overcome the resistance of the epidermis, encounters the soft, moist tissues, and all of these being good conductors, it spreads out, as it were, or ramifies in them (undergoing thereby a great diminution of density) till a point midway between the rheophores is reached, when the diverging paths begin to converge till they reunite at the other rheophore. Since this ramification of the current causes a diminution of its intensity, we see that the intensity of the current is diminished by the wide separation of the rheophores. If, therefore, we wish to influence any particular region very strongly, our end is in part obtained by a closer approximation of the rheophores. The denser the current the greater is its physiological action. We may regulate the density of the current by the size of our rheophores. If one rheophore be of large surface and the other of small surface, it is evident that the current will be most dense in the neighbourhood of the smaller.

Rheophores do not always take the shape of sponge-holders, but these will be found the most generally useful for ordinary purposes. They are made of any conducting material, metal or carbon being generally employed, and are made of various sizes and shapes, according to the purpose for which they are used; we may use our rheophores either dry or moistened. If we wish merely to influence the skin, we may use them dry; but if we wish to affect the deeper tissues, it is absolutely necessary to moisten them.

If we wish to faradise the skin, we use both our rheophores dry, or it is better to use one dry and one moist. We place the moist rheophore upon some indifferent part of the patient's body, and the dry one upon that part of the skin we wish to influence. If a very gentle effect is desired, we may have recourse to the manœuvre known as the electric hand, which, I believe, we owe to the ingenuity of Duchenne. The skin should be dried and powdered, and one moistened rheophore being placed upon an indifferent spot on the patient's body, the other should be held in the hand of the operator, who may then, with the back of this hand, previously dried and powdered, stroke the dried and powdered patch of his patient's skin. The effect is a strange crackling noise, accompanied by a gentle tickling-pricking sensation. It is generally used only about the face, and whether it is ever of any use I am unable to say.

If we wish to influence the skin more strongly, we may do so by means of a pointed metallic rheophore held persistently at one spot, or by brushing the surface of the skin with a metallic brush.

If we wish to influence the muscles (and it is the muscles which we most commonly need to influence in electro-therapeusis), we must first overcome the resistance of the skin. Salandière was the first to attempt to influence the individual muscles, and this he did by thrusting insulated needles through the skin into the very muscles themselves—a formidable proceeding, which is, happily, no longer necessary, since the skin, by being thoroughly moistened, is converted into a good conductor. The moistening of the skin should be effected by means of *hot salt and water.* Saline solutions conduct far better than pure water, and hot water softens the skin far more quickly and effectually than cold.

How should we seek to influence the muscles? This has been a vexed point, and has been hotly disputed, and, as well as other vexed points, has given rise to such unseemly quarrels that the *odium electricum* has become recognised as the rankest form under which the *odium medicum* is to be found. When one sees an army of careful observers on either side contending with wonderful bitterness as to whether or not the muscles are best stimulated directly or indirectly, as to whether or not the sympathetic nerve-trunk is amenable to galvanism, and as to whether the polar method or the direction method of using the continuous current is to have the preference, one is naturally led to the conclusion that there must be some right on both sides, and as a consequence, if both sides are in some degree right, they must both be—since they differ *toto cœlo*—in some degree wrong. The fact of the matter is that when once the electric current has passed the skin it is very much beyond our control, and it is quite as difficult to limit its action to a certain point as it is to prevent its action from influencing any particular spot. In this way, I believe, we may account for the great benefit which often follows the employment of electricity in the hands alike of polarisers, directionists, localisers, and others. Duchenne is the originator of the so-called "localised faradisation." In the treatment of disease he employs faradism almost exclusively, and lays it down as a rule that, whether we want to influence nerve-plexuses, nerve-trunks, nerve-filaments, or muscles, the rheophores should always be approximated as closely as possible. In this way there can be no doubt that he gets currents of the greatest possible density, and such as are therefore capable of exercising a maximum amount of stimulation on the parts. We can influence a muscle in two ways:—(1) By acting upon the muscle itself, which is called direct faradisation; or (2) by acting upon the nerve which supplies the muscle, which is called indirect faradisation. Duchenne always prefers the former method when practicable—that is, with all superficial muscles. When employing direct faradisation, he directs that the rheophores be held in one hand, the other being left free to regulate the strength of the current. "To completely faradise a muscle," he says, "it is necessary that the rheophores should cover the whole surface of that muscle, and if they are not big enough to do so, they must be applied successively on all points of the surface. The thicker the muscle, the stronger must be the current, for if the current is feeble the excitation of the muscle only takes place in the superficial layers." For big muscles, such as the deltoid, trapezius, or extensors of the thigh, big sponges may be used, and these sponges should be "promenaded" over the whole extent of the muscle. For smaller muscles, such as the interossei of the hand or foot, or for the facial muscles, smaller rheophores are more convenient. They may be flat metal discs covered with wash-leather, or they may be conical. The disc is a very useful form of rheophore, for you may use either the broad flat surface or the narrow edge.

Duchenne claims for his method that, by strictly localising the current, we run very small risks of producing general effects. It is well known that, in certain recent cases of paralysis accompanied by active changes in the nerve-centres, faradisation, especially if not accurately localised, has produced untoward results; and it is to avoid such results that Duchenne's method is used.

The indirect method—the method proposed by Remak and worked out by Ziemssen—consists, not in stimulating the muscular fibres themselves, but in acting upon the nervous twig which is in direct communication with the muscle. In this way a thorough contraction of all the fibres supplied by the nerve is ensured; and the champions of this method further claim for it that it is more physiologically correct to stimulate a muscle through its proper channel of stimulation. In Ziemssen's work, "Die Electricität in der Medicin," you will find some careful drawings, in which are accurately delineated the exact points on the surface of the body at which the various motor-nerve branches supplying the different muscles are most readily accessible.

To practise this method it is necessary to have two rheophores of different shapes: one of large surface should be placed upon some indifferent part of the body, such as the sternum or the hand; the other should be olive-shaped, with a pointed extremity, and should be applied directly to the motor point. As to the motor points, there is no mystery about them, and your knowledge of anatomy and a little practice will enable you to hit upon them.

There are certain points in the employment of galvanism which require special mention. All the differences of method in employing galvanism arise mainly from the fact that the current flows continuously in a definite direction, and has very decided chemical and thermal effects, especially at the negative pole.

The galvanic current may be employed continuously, or it may be used interruptedly. If employed continuously, we must take care that the current is not too intense, and that the negative pole is not placed upon too sensitive a part of the skin, otherwise we shall produce inflammation and blistering at the spot where it is applied.

If the galvanic current be employed for stimulating muscles to contract, it must be interrupted; for you will remember that contractions only occur at the moment of making or breaking the circuit. For stimulating muscles, the direct or the indirect method may be adopted, and the same considerations as to the size and the position of the rheophores hold good as with faradism. The interruptions may be effected by constantly removing or replacing one of the rheophores; but this is not a good plan if we wish accurately to observe the excitability of a muscle. It it better to leave the rheophores *in situ*, and make the interruptions by means of a conductor or a cogged wheel. Some authorities lay great stress upon the direction which the current takes either *down* the limb (the direct current), or *up* the limb (the inverse current). The former is said mainly to influence motor nerve-fibres. I am not aware that these assertions are founded on any well-authenticated facts. The facts have not come under my own observation.

Let us try an experiment on this man. You see that we place the positive pole in the axilla, and the negative over the ulnar nerve. On closing the circuit we stimulate the ulnar nerve, and get contraction of the muscles supplied by it. If we reverse the current, and make the auxiliary rheophore the negative pole, then, on closing the circuit, we get much more movement; for the arm is flexed at the wrist and elbow, and the hand is supinated. This is an apparent contradiction to the assertion that the descending current has most power in stimulating motor nerves. The real explanation is that, in the first instance, the cathode exerted its influence only on one nerve—the ulnar; while in the second instance it stimulated all three cords of the brachial plexus.

Benedict, of Vienna, lays great stress upon the position of his rheophores, and he distinguishes several varieties of current. Thus, if one rheophore be placed upon the spinal column and the other on a nerve or muscle, he distinguishes the currents as *spinal nerve currents* or *spinal muscle currents;* or if one rheophore be placed on the nerve and the other on the muscle, he speaks of it as a *nerve-muscle current.* We may imitate him, and distinguish these currents by letters—S.N.C., S.M.C., N.M.C.—which will be found convenient when making notes of cases. He lays it down as a rule that the *locus morbi*, be it brain, spinal cord, nerve, or muscle, should always be included between the rheophores.

There is one method of using galvanism which I believe (*a*) is almost exclusively practised by myself. This is the combination of a continuous galvanic current with voluntary muscular exercise. There are many cases—as you will find when we come to speak of therapeutics—in which, without any paralysis in the ordinary sense, there is considerable impairment of nervous or muscular activity; and it is in these cases that I have found the above-mentioned method of great and undoubted use. If one wishes to influence a certain muscle or group of muscles, one polarises the nerve supplying it or them with a very mild galvanic current, so as to produce a maximum amount of cathelectrotonus in the polarised part. In this state a nerve has its irritability and conductivity for stimuli increased. Cyon, by polarising his ulnar nerve with a weak descending current and stimulating the portion of nerve below the cathode with the faradaic current, found that with the same amount of faradism there was increased irritability and activity of the nerve (as measured by the contractions of the adductor of the thumb) when the circuit of the current was closed, than there was before its closure. The excitability of the nerve for artificial stimuli was increased. If for artificial stimuli, why not for mental stimuli also? My clinical observations seem to point to the fact that during the passage of the polarising current the voluntary mental stimulus acts with greater effect on the muscles, or, in other words, the contracting power of the muscles is increased. This increased activity on the part of the muscles is a fact of which I have no doubt. The true explanation is, however, more doubtful. It may be due to the electrotonic condition of the nerve, or it may be due to the action of the current upon the vaso-motor nerves and the consequent change brought about in the nutritive activity of the muscles or nerves.

The great power which the galvanic current has upon the peripheral circulation (whatever may be its influence upon the circulation of central organs) is a fact of which nobody who has, even to a small extent, employed electricity can entertain a doubt.

DUFOUR ON PREGNANCY WITH PERSISTENT HYMEN.

M. Dufour (*Archives de Toxicologie*, June, 1874) was consulted by a lady for some abdominal enlargement. On feeling the tumour, the movements of a child were apparent. On proceeding to make a vaginal examination, his finger was prevented from entering the passage by a complete circular band, which ocular demonstration proved to be the hymen. In leucorrhœa the parts sometimes become much relaxed, and rendered thereby very dilatable, so that, under certain circumstances, the act of coitus may be completed without any rupture of the hymen. In this case, the patient said that she had never suffered from the "whites," and this was substantiated by the condition found.—*London Medical Record.*

THE BRITISH ASSOCIATION.

(FROM OUR SPECIAL CORRESPONDENT.)

On August the 19th the British Association for the Advancement of Science met in Belfast. The session was inaugurated by an address from the President, Professor Tyndall, given in the Ulster Hall, which is capable of accommodating 3,000 persons. The meeting was largely attended. The Association visited Belfast once before, in 1852, upon which occasion, as also on the present one, the inhabitants vied with each other in giving a hearty welcome to the learned *savants*, whose position in the world of science, art, and literature fully entitles them to. At the time of the visit of the Association this year only a few of the mills and factories were working, owing to the strike in the flax-spinning and linen trade, which was unfortunate, as the linen manufacture of Belfast has gained a world-wide fame.

The Examination Hall in the Queen's College was fitted up as a reception room. In this room there was an address office, where members left their names and addresses immediately on their arrival, in order that they might be published. There was also an office where members and visitors obtained information as to lodgings. There was then an excursion office—that is, an office where programmes of the excursions, and information regarding the localities to be visited could be had. There was also an office for lost articles and general inquiries. Then a telegraph office, and a post office, and an office for the distribution of printed programmes and journals of the association. There was also a luggage and parcel department for the accommodation of visitors. A very useful provision was the refreshment room, into which the gymnasium has been converted. Attached thereto was a ladies' room and a gentlemen's smoking-room.

On Thursday morning, and every morning during the meeting, the committees of sections met at 10 a.m., and the sections themselves at 11 a.m. Sections A—Mathematical Science, B—Chemical Science, D—Biology, and G—Mechanical Science, met in the Queen's College; C—Geology, and F—Economic Science, in the Methodist College; and E—Geography, in the General Assembly's College. On Thursday evening there was a *soirée* in the Ulster Hall, at 8 p.m.; and on Friday evening, at 8·30, a discourse delivered in the same building by Sir John Lubbock, Bart., M.P., on "Common Wild Flowers considered in relation to Insects." On Saturday, at 7·30 p.m., Prof. Odling delivered his lecture to the working classes on "Oxygen." On Monday, Professor Huxley lectured at 8·30 p.m., on "The Hypothesis that Animals are Automata, and its History." On Tuesday there was a *soirée* at 8 p.m.; and on Wednesday, after a general committee meeting in the library of the Queen's College, the concluding general meeting took place at 2·30 p.m. in the Ulster Hall, where, we should add, all the lectures were delivered and *soirées* held. The sections were opened on Thursday morning by an address from the president of each.

Two excursions were fixed for Saturday, the 22nd inst., one to Coalisland and the Tyrone coalfields, and the other to Castle Espie Lime Works in county Down, where preparations were made for a series of experiments to illustrate the power and explosive properties of the new blasting agent, dynamite.

The regular association excursions took place on Thursday, the 27th instant. Seven were arranged for; one to the Giant's Causeway, a second to Lough Neagh, Shane's Castle, Massereene Park, and Antrim Round Tower; a third to the Antrim Coast Road, Glenarm, and Garron Tower; a fourth to Newcastle, Bryansford, and Donard Lodge; also one to Duncrue Salt Mines, the Belfast Water Works, and Carrickfergus Castle; an excursion also to

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(*a*) Dr. Poore is here mistaken, as practical physicians combine the use of gymnastics and electricity.—Reporter.

Glenravel Iron Mines and the Peat Compressing Works of Cargan, in the county of Antrim; and one to the interesting Druids' Altar and Circle known as the "Giant's Ring," and we believe to the ruins of the old Franciscan Abbey, at Grey Alley, co. Down.

We may add that in the Ulster Minor Hall a collection of Irish antiquities, brought together by the Royal Historical and Archæological Society of Ireland, and the Belfast Naturalist Field Club, will be exhibited.

An International Horticultural Show took place in the Royal Botanic Gardens on Thursday and Friday. The Ulster Medical Society entertained at breakfast, on Aug. 22nd, the members of the association who belonged to the medical profession.

THE PRESIDENT'S ADDRESS.

The following extracts are from Professor Tyndall's opening address:—

The principles enunciated by Democritus reveal his uncompromising antagonism to those who deduced the phenomena of nature from the caprices of the gods. They are briefly these: 1. From nothing comes nothing. Nothing that exists can be destroyed. All changes are due to the combination and separation of molecules. 2. Nothing happens by chance. Every occurrence has its cause from which it follows by necessity. 3. The only existing things are the atoms and empty space; all else is mere opinion. 4. The atoms are infinite in number, and infinitely various in form; they strike together, and the lateral motions and whirlings which thus arise are the beginnings of worlds. 5. The varieties of all things depend upon the varieties of their atoms, in number, size, and aggregation. 6. The soul consists of free, smooth, round atoms, like those of fire. These are the most mobile of all. They inter-penetrate the whole body, and in their motions the phenomena of life arise. Thus, the atoms of Democritus are individually without sensation; they combine in obedience to mechanical laws; and not only organic forms, but the phenomena of sensation and thought are also the result of their combination.

That great enigma, "the exquisite adaptation of one part of an organism to another part, and to the conditions of life," more especially the construction of the human body, Democritus made no attempt to solve. Empedocles, a man of more fiery and poetic nature, introduced the notion of love and hate among the atoms to account for their combination and separation. Noticing this gap in the doctrine of Democritus, he struck in with the penetrating thought, linked, however, with some wild speculation, that it lay in the very nature of those combinations which were suited to their ends (in other words, in harmony with their environment) to maintain themselves, while unfit combinations, having no proper habitat, must rapidly disappear. Thus, more than 2,000 years ago the doctrine of the "survival of the fittest," which in our day, not on the basis of vague conjecture, but of positive knowledge, has been raised to such extraordinary significance, had received, at all events, partial enunciation.

In the lowest organisms we have a kind of tactual sense diffused over the entire body; then, through impressions from without and their corresponding adjustments, special portions of the surface become more responsive to stimuli than others. The senses are nascent, the basis of all of them being that simple tactual sense which the sage Democritus recognised 2,300 years ago as their common progenitor. The action of light, in the first instance, appears to be a mere disturbance of the chemical processes in the animal organism, similar to that which occurs in the leaves of plants. By degrees the action becomes localised in a few pigment-cells, more sensitive to light than the surrounding tissue. The eye is here incipient. At first it is merely capable of revealing differences of light and shade produced by bodies close at hand. Followed as the interception of the light is in almost all cases by the contact of the closely adjacent opaque body, sight in this condition becomes a kind of "anticipatory touch." The adjustment continues; a slight bulging out of the epidermis over the pigment-granules supervenes. A lens is incipient, and, though the operation of infinite adjustments, at length reaches the perfection that it displays in the hawk and eagle. So of the other senses; they are special differentiations of a tissue which was originally vaguely sensitive all over.

The *origination* of life is a point lightly touched upon, if at all, by Mr. Darwin and Mr. Spencer. Dismissing gradually the number of progenitors, Mr. Darwin comes at length to one "primordial form;" but he does not say, as far as I remember, how he supposes this form to have been introduced. He quotes with satisfaction the words of a celebrated author and divine who had "gradually learnt to see that it is just as noble a conception of the Deity to believe He created a few original forms, capable of self-development into other and needful forms, as to believe that he required a fresh act of creation to supply the voids caused by the action of His laws." What Mr. Darwin thinks of this view of the introduction of life I do not know. Whether he does or does not introduce his "primordial form" by a creative act, I do not know. But the question will inevitably be asked, "How came the form there?" With regard to the diminution of the number of created forms, one does not see that much advantage is gained by it. The anthropomorphism, which it seemed the object of Mr. Darwin to set aside, is as firmly associated with the creation of a few forms as with the creation of a multitude. We need clearness and thoroughness here. Two courses and two only are possible. Either let us open our doors freely to the conception of creative acts, or, abandoning them, let us radically change our notions of matter. If we look at matter as pictured by Democritus, and as defined for generations in our scientific text-books, the absolute impossibility of any form of life coming out of it would be sufficient to render any other hypothesis preferable; but the definitions of matter given in our text-books were intended to cover its purely physical and mechanical properties. And taught as we have been to regard these definitions as complete, we naturally and rightly reject the monstrous notion that out of *such* matter any form of life could possibly arise. But are definitions complete? Everything depends upon the answer to be given to this question. Trace the line of life backwards, and see it approaching more and more to what we call the pure physical condition. We reach at length those organisms which I have compared to drops of oil suspended in a mixture of alcohol and water. We reach the *protogenes* of Hæckel, in which we have "a type distinguishable from a fragment of albumen only by its finely granular character." Can we pause here? We break a magnet and find two poles in each of its fragments. We continue the process of breaking, but however small the parts, each carries with it, though enfeebled, the polarity of the whole. And when we can break no longer, we prolong the intellectual vision to the polar molecules. Are we not urged to do *something* similar in the case of life? Is there not a temptation to close to some extent with Lucretius, when he affirms that "nature is seen to do all things spontaneously of herself without the meddling of the gods?" or with Bruno, when he declares that matter is not "that mere empty *capacity* which philosophers have pictured her to be, but the universal mother who brings forth all things as the fruit of her own womb."

The strength of the doctrine of evolution consists, not in an experimental demonstration (for the subject is hardly accessible to this mode of proof), but in its general harmony with the method of nature as hitherto known. From contrast, moreover, it derives enormous relative strength. On the one side we have a theory (if it could with any propriety be so called) derived, as were the theories referred to at the beginning of this address, not from the study of nature, but from the observation of men—a theory which converts the power whose garment is seen in the visible universe into an artificer, fashioned after the human model, and acting by broken efforts as man is seen to act. On the other side we have the conception that all we see around us, and all we feel within us—the phenomena of physical nature as well as those of the human mind—have their unsearchable roots in a cosmical life, if I dare apply the term, an infinitesimal span of which only is offered to the investigation of man. And even this span is only knowable in part. We can trace the development of a nervous system, and correlate with it the parallel phenomena of sensation and thought. We see with undoubting certainty that they go hand in hand. But we try to soar in a vacuum the moment we seek to comprehend the connection between them. An Archimedean fulcrum is here required which the human mind cannot command; and the effort to solve the problem, to borrow an illustration from an illustrious friend of mine, is like the effort of a man trying to lift himself by his own waistband. All that has been here said is to be taken into connection with this fundamental truth. When "nascent senses" are spoken of, when "the differentiation of a tissue at first vaguely sensitive all over is spoken of," and when these processes are associated with "the modification of an organism by its environment," the same parallelism, without contact, or even approach to contact, is implied. There is no fusion possible between the two classes of facts—no motor energy in the intellect of a man to carry it without logical rupture from the one to the other.

. Further, the doctrine of evolution derives man, in his totality, from the interaction of organism and environment through countless ages past—the Human Understanding, for example—that faculty which Mr. Spencer has turned so skilfully round upon its own antecedents—is itself a result of the play between organism and environment through cosmic ranges of time. Never surely did prescription plead so irresistible a claim. But then it comes to pass that, over and above his understanding, there are many other things appertaining to man whose prescriptive rights are quite as strong as that of the understanding itself. It is a result, for example, of the play of organism and environment that sugar is sweet and that aloes are bitter, that the smell of henbane differs from the perfume of rose. Such facts of consciousness (for which, by the way, no adequate reason has ever yet been rendered) are quite as old as the understanding itself; and many other things can boast an equally ancient origin. Mr. Spencer at one place refers to that most powerful of passions—the amatory passion—as one which, when it first occurs, is antecedent to all relative experience whatever; and we may pass its claim as being at least as ancient and as valid as that of the understanding itself. Then there are such things woven into the texture of man as the feeling of awe, reverence, wonder—and not alone the sexual love just referred to, but the love of the beautiful, physical and moral, in Nature, Poetry, and Art. There is also that deep-set feeling which, since the earliest dawn of history, and probably for ages prior to all history, incorporated itself in the religions of the world. You who have escaped from these religions into the high-and-dry light of the understanding may deride them; but in so doing you deride accidents of form merely, and fail to touch the immovable basis of the religious sentiment in the emotional nature of man. To yield this sentiment reasonable satisfaction is the problem of problems at the present hour. And grotesque in relation to the scientific culture as many of the religions of the world have been and are—dangerous, nay, destructive, to the dearest privileges of freemen as some of them undoubtedly have been, and would, if they could, be again—it will be wise to recognise them as the forms of a force, mischievous, if permitted to intrude on the region of *knowledge*, over which it holds no command, but capable of being guided by liberal thought to noble issues in the region of *emotion*, which is its proper sphere. It is vain to oppose this force with a view to its extirpation. What we should oppose, to the death if necessary, is every attempt to found upon this elemental bias of man's nature a system which should exercise despotic sway over his intellect. I do not fear any such consummation. Science has already to some extent leavened the world, and it will leaven it more and more. I should look upon the mild light of science breaking in upon the minds of the youth of Ireland, and strengthening gradually to the perfect day, as a surer check to any intellectual or spiritual tyranny which might threaten this island than the laws of princes or the swords of emperors. Where is the cause to fear? We fought and won our battle even in the Middle Ages; why should we doubt the issue of a conflict now?

The following are abstracts of some of the papers read in the different sections:—

Professor Redfern, M.D., President of the Biological Section, delivered the opening address on

ANATOMY AND PHYSIOLOGY.

He said: It has occurred to me that in attempting to give a stronger impulse and a more systematic direction to scientific inquiry, the time ordinarly devoted to an introductory address could not be more profitably occupied than by bringing into as great prominence as possible some of the great revolutions in our knowledge of anatomy and physiology which have taken place in my own time, and under my own immediate observation. I remember, as if it were yesterday, the elucidation in the Museum of the Royal College of Surgeons of Edinburgh of the newly-discovered cell theory, by the late distinguished professor of anatomy, John Goodsir—his account of the production of ulceration by cell growth—of the character of the corpuscles of bone—of the structure of lymphatic glands and of the germinal centres of basement membranes, as they were then understood.

This was the time when the teaching of histology was first established in Great Britain. Two students, of whom I was one, formed the first class, under the most enthusiastic of teachers, my old friend Dr. Hughes Bennet.

At this period the great discoveries of Schleiden and Schwann seemed likely to upset all that had previously constituted physiology. The idea that all tissues were either composed of cells or had been formed of cells—that nucleated cells elaborated all the secretions—that their energy lay at the root of the foundation, the reproduction, and the function of every tissue and organ, was a revelation of such astounding simplicity as will upset men's minds, and prevent their seeing beyond. No one who did not live through that time will, I believe, ever realise the eagerness and anxiety with which every new statement of the action of cells was received and added to the previous knowledge of their amazing power; or, on the other hand, be able to judge of the feeling, half akin to disappointment, which was experienced as each attack was made on this charming thing, showing it to be really human—very human indeed. Cells were then understood to constitute the mass of all organs, the liver, spleen, kidney, and brain, and to be the main agents in the discharge of their functions; to exist and grow upon the definite membranous walls of the glandular vesicles and ducts—to be fed by blood brought to the attacked surface of membranes, which seemed almost everywhere to form an absolute separation of the cellular part, the potential gland from the non-essential blood and lymph vessels, the nerves and framework of the organ.

This great cell theory has now given place to what I think is certain knowledge: that living matter may more than perform all the functions of assimilation and intrusion, and reproduce its like, without having any of the essential characters of a cell. A living mass of protoplasm may change its shape, alter its position, feed and nourish itself, and form other matter, having the same properties as it has, and yet be perfectly devoid of any structure recognisable by the highest powers of the microscope.

Mr. Lister showed that the construction of pigment cells in the skin changes the position of the pigment granules, driving them alternately into the processes and the body of the cell. Külme, Golubew, and Stricker observed changes of form in amœbæ, white blood-corpuscles, and embryonal capillaries respectively after the application of electrical stimuli; and Brucke observed contraction in the pigment cells of the skin of the chameleon after excitation of the sensory nerves, whilst Külme noticed contraction in the corneal cells after excitation of the corneal nerves. Thus, obvious movements in fixed cells, or masses of protoplasm, are proved to result from the operation of various stimuli, including nervous stimuli.

But all cells are not fixed. The blood cells, fixed as cells of organs at an early period, became free in the blood fluid, and are hurried along by the forces which circulate it, until a second time they enter into the composition of the solid tissues by penetrating the walls of the blood-vessels, and moving along the substance of the tissues for purposes which are not yet wholly explicable. What naturalist will not at once suggest how frequently this process of alternate friction and movement of animal forms occur low down in the scale, and yet how startling is it in man? How impossible to reconcile with our former ideas of the existence of membranous coverings of cells of surfaces, and of gland ducts.

Let us now, for a few moments, compare our former views of the structure of animal membranes with the present ones. The skin covering the outer surface of the body; the mucous membranes; the serous linings of the great internal cavities, and of blood and lymph vessels; and the living membranes of joints, were all alike vivid, as if formed on a definite membrane, covered on one side by cells, and on the other supplied with blood, lymph-vessels, and nerves; the membrane covering in the latter parts, and effecting an absolute separation of the cells from the vessels and nerves, which were universally believed never to penetrate into the cellular layer. The cells were regarded as the parts actively engaged in the performance of these functions, the vessels and nerves adding thereto, supplying material to be acted upon by the cells; and the nerves regulating the amount of action at particular times for special purposes. The diseased conditions, like the functions, were kept perfectly distinct, and we had one set of diseases of the epithelial or cellular parts, and another and a different set of diseases of the membranes and of the parts below.

I think the first occasion on which the public faith in these views was seriously shaken was when the late distinguished Professor of Medicine in St. Andrews, Dr. John Reid, died of what was called an epithelial cancer of the tongue. Microscopical examinations showed that the disease existed in the cellular covering of the tongue. A sufficient cause for it was supposed to exist in the irritation caused by sharp points of the teeth, to cover which a protecting silver plate was constructed. The diseased parts were removed with the greatest skill and care by Sir Wm. Fergusson, and subsequently by the late Dr. James Duncan, assisted by Mr. Goodsir and Mr. Spence, now professors of surgery in the University of Edinburgh. Every conceivable care was taken by those attached friends of the poor sufferer to remove any trace of the disease, but it progressed steadily and destroyed this valuable life. At this period no one could understand the extension of an epithelial disease through a basement membrane, and, therefore, the affection of the adjacent lymphatic glands was explained by supposing the diseased action to have been propagated from cell to cell along the epithelial surface of the lymphatic vessels. Not long afterwards the sternly-truthful and accurate Sir James Paget declared, in terms of terrible significance, to the sufferers of the disease, that epithelial cancer takes a little longer time to do its fatal work. And it soon became thoroughly well known that the glands of the skin, the hair bulbs, and the teeth are produced by a local development of the deep cells of the cuticle, extending far below the line of the basement membrane or cutis, and through the position which it was supposed to occupy, as though no membrane were there to hinder them. Thus the basement membrane, which was supposed so arbitrarily to separate the cells on one surface of membrane from the vessels and nerves on the other gives way at once before an increased development of the cells, whether in the formation of new organs or the extension of disease. And the membranous walls of capillary blood-vessels allow the corpuscles of the blood to pass through them much in the same way as solid particles enter into and traverse the substance of the protoplasm of an amœba or other mass.

Whilst physiologists were engaged in these observations the late Master of the Mint, Mr. Graham, was conducting a series of experiments of the most remarkable kind and of the utmost importance to physiology, as well as to chemistry and physics. He found it necessary to separate two sets of substances, as crystalloids and colloids, the colloids being penetrable by the crystalloids as readily as water is; the crystalloids, such as hydrochloric acid and common salt, passing through organic membranes with great freedom; whilst many of the colloids, such as albumen and gum, will not penetrate them at all. This discovery has enabled the chemist to separate crystollids from colloids by dialysis even when they occur in the most minute proportions—for instance, to separate 80 or 90 per cent. of a ten-thousandth part of arsenious acid in twenty-four hours from porter, milk, or infusions of viscera, substances notoriously difficult to analyse, and it has enabled physiologists to explain how animal membranes are traversed by various substances which could not pass through them without being changed from the colloidal into crystalloidal form. Thus, the colloidal starch and albumen of our food scarcely admit of absorption until, in the process of digestion, the starch becomes sugar, and the albumen albuminose crystalloidal bodies, which pass through animal membranes with great facility. And, again, this crystalloidal albuminose, after having passed into the tissues through the membranous walls of the vessels, may become a second time a colloid, and be deposited and fixed as tissue substance, ready in its turn to be terminated by crystalloids either for temporary or more durable purposes in the economy. The effect of this great discovery of Mr. Graham's shows how impossible is the advance of physiology without a corresponding advance in our knowledge of chemistry and physics. If basement membranes of the walls of blood-vessels and of cells are made up of colloidal matter we can easily understand how they are penetrated by crystalloids, and, in like manner, it is perfectly possible that they may be traversed by other substances in solid forms—as, for instance, the walls of blood-vessels by the corpuscles of the blood. No wonder that there is a continual disposition and removal of the constituents of the tissues if so slight a change as that from the crystalloidal to the colloidal form, and the reverse, make such perfectly marvellous differences in the relation of the substance to each other.

We must look upon the tissues of an animal body as we do upon the substance of an ambœba, and recollect how penetrable the surfaces and tissues of an animal are; then we shall cease to be startled when we see these parts become the seat of entirely new deposits, or find them traversed by migrating blood corpuscles as freely as a colloid is penetrated by a crystalloid.

The general relations of the gustatory nerves to the epithelial cells of the tongue have been described by Axel Key as similar in the fungiform papillæ of the frog, and by Schwalbe and Loven in the gustatory cells of the circumvallate, and of some of the fungiform papillæ in men and animals. On the protected side of the circumvallate papillæ a peculiarity in the shape and arrangement of epithelial cells produces a series of taste cones, the central cells of which are furnished with hair-like prolongations, similar to those of the olfactory cells. In the otolith sacs and ampulæ of the semi-circular canals of the ear, the nerve filaments, having lost their white substance, become connected with peculiar auditory cells, and end in hair-like processes between the epithelial cells.

Of the recorded instances in which nerves pass through basement membranes to get into direct contact or continuity with the superjacent epithelial cells, none is so striking as that of the salivary and other glands, if there be the least ground for the remarkably detailed observations and suggestions of Pflüger. They are of so much importance and interest in connection with the whole process of secretion that I offer no excuse for directing your attention to them, even though it may be proved that the act of secretion is not attended with such marvellous and extensive changes of structure as Pflüger supposes.

Up to a certain point his observations may be easily and abundantly confirmed; beyond that there is much greater difficulty; but this meeting offers one of the most favourable opportunities for extending our knowledge by bringing different observers into easy communication with each other, and enabling each to help the rest by stating the means by which he had overcome what seemed at first to be insuperable difficulties in the progress of an investigation.

Pflüger calls attention to the very valuable character of the alveoli, the secreting cells, and the excretory ducts of the salivary glands. These parts, which were believed to have very determinate sizes and characters, he declares to differ very greatly in different parts of the same gland. The alveoli, occupied by what we understand as secreting or glandular epithelial cells and the excretory ducts, lined by columnar epithelium, he thinks he can prove to be but different stages of development of the same structure, produced on the ends of the myriad nervous filaments supplied to these glands. On this view glandular epithelial cells must be regarded as special organs of termination of nerve fibrils. Like the auditory organs, touch corpuscles, olfactory cells, muscular fibre cells, and the like—the relation between such structures and the nerves becoming so close that it may be difficult, perhaps impossible, to define their respective limits. Pflüger has figured the nucleus of the cells of the alveoli of the salivary glands, the salivary cells, connected with a delicate fibre, which after pierces the surface of the cell in contact with the *membrana propria*, and gives the cell the appearance of being stalked.

Professor Huxley said that no address to which he had ever listened had presented to his mind a more lucid and clear picture of the present state of science and its recent advances than than delivered by Professor Redfern. He did not desire to exceed his duty, or to detain the section from its business, but he wished to say a word with a view of correcting an impression which might have been derived from such an address, and which Professor Redfern would agree with him was a mistaken one. Professor Redfern had spoken with great justice of the immense revolution which was effected by the promulgation of the cell theory. He (Professor Huxley) could testify to the magnitude of that revolution, seeing that it coincided as nearly as possible with the time at which his own attention was directed to such matters. It certainly had as great an effect upon the biological world as the French Revolution of 1789 had upon the political world. But if that revolution were taken *au pied de la lettre*—if we were to look simply at the precise form in which Schleiden and Schwann put forward their new doctrines, then undoubtedly the impresssion that might be derived from Professor Redfern's address was a correct one—viz., that nine-tenths of the positions formerly regarded as cardinal had been abandoned. Carrying away that impression they might leave the room with the feeling which was satisfactory to some persons, that men of science were always sticking up new things for the purpose of knocking them down again—that they knew no more than the rest of the world, but only used bigger words. That, however, was not the case. Underneath the whole of the great doctrine of Schleiden and Schwann, or their particular mode of expressing it, there lay an idea which had nothing to do with that form of expression, and it was that idea which had only been established by further observation, and which now remained absolutely unassailable—viz., the idea that the living body is not a simple continuous whole, that its action is not the action of a unity, but that it is made up of a multitude of parts which lead a *quasi* independent life; that the body of a man, for example, is made up of enormous multitudes of simple living particles, which although subordinated and kept together by the nervous connections of which Professor Redfern had spokeh, lead a *quasi* independent individual life, like the cells or organic elements. That idea was the kernel of the revolution effected by Schleiden and Schwann—the application of the doctrine to animal structures as it had previously been applied to vegetable structures. The idea had been simply strengthened and enlarged by everything that had been done since, and it remained absolutely fixed whatever might be the shifting changes of opinion regarding its minor details.

Dr. Carpenter, in putting the resolution, said his recollection went back earlier than that of Professor Huxley to the pre-Schleiden and Schwann period, and he knew therefore what the darkness of their ignorance then was. He could endorse all that Professor Huxley had said as to the fundamental idea which those physiologists introduced, being that which had dominated the whole subsequent progress of the inquiry. He wished to add a word of caution with regard to the later researches. It was extremely important that the results should be confirmed by other inquirers before they were accepted. At an earlier period they all saw cells everywhere with their mind's eye, but not always with the bodily eye, interpreting the appearances by a preconception. So it might be that even an eminent observer like Pflüger might misinterpret appearances under a misconception as to the nervous fibres passing into epithelial cells. Until the observations had been thoroughly scrutinised by others he should hesitate to accept them as scientific truths, but when once they were established no one would more readily accept them than himself, although they were opposed to his preconceptions.

INTESTINAL SECRETIONS.

Dr. Pye Smith read a report of the committee appointed to investigate into intestinal secretions. The committee had endeavoured to ascertain—first, whether other neutral salts had a similar effect to that of sulphate of magnesia on intestinal secretion; secondly, whether any other compound had the power of preventing such action; and thirdly, what were the nerves which regulated those secretions during life. The experiments showed that several other neutral salts possess a similar action to that of sulphate of magnesia, though none are so constant or so marked in their action. With regard to the second subject of inquiry, experiments were made with sulphate of atropia, chloral hydrate, and other substances, but in none was any effect observed in diminishing the average amount of secretion produced by sulphate of magnesia; there appeared, therefore, to be no action analogous to that of atropia upon the secretions of the submaxillary gland. With reference to the third point, it appeared from experiments on the splanchnic nerves, that those nerves are not the channel by which the currents from the cord pass to the secretory apparatus of the intestines. What that channel is, the committee proposes to ascertain by further investigation, which it was intended to apply not only to the secretion, but also to the movements of the intestinal tube.

DECOMPOSITION OF EGGS.

Mr. William Thomson, F.C.S., of the Royal Institution, Manchester, read a paper on the "Decomposition of Eggs." He said the researches on this subject were commenced by the late Dr. Crace Calvert and himself about the beginning of October, 1870, and extended over the following year and a half. From innumerable experiments he drew the following conclusions—that whole eggs could only be attacked by one, two, or all, of three different agencies of decomposition. The first, which he termed putrid cell, is capable of being developed within some eggs no matter how effectually their shells be protected from the spores floating in the atmosphere by varnished coverings. It is generated from the yolk. In some cases the yolk begins to swell and absorbs most of the white; in others the yolk bursts and its whole substance becomes thoroughly mixed up with the white; and in others again it begins to change slightly, and then gives off minute cells into the white, rendering the white turbid; but in all cases where this takes thorough hold of the contents of the egg, true putrefaction commences, and the albumen emits a putrid smell. The minute granules or cells of the healthy yolk, when this decomposition commences, assume a morbid vitality, they grow large, and become filled with small cells; each large cell then bursts, and the smaller cells take independent existence. These cells are the bioplasm of the yolk, which, had the egg developed into a chicken, would have gone to form its flesh, bone, and tissues. These cells, under their morbid vitality, absorb oxygen, and liberate carbonic acid gas, like animalculæ, but unlike animalculæ, they can develope without that gas. Two eggs had their shells well varnished over with shellac, and were set aside on a shelf for one year, and both then opened. One appeared as fresh as the day on which it was set aside, but when the other was struck with the point of a knife to open it, the pressure of gas contained within the shell burst out, and scattered parts of its contents in all directions. The next germ of decomposition—the vibrio—appears under the microscope like a small rigid worm which swims about. These animalculæ are constantly found floating about in the atmosphere, but never penetrate into the contents of an egg if the shell be kept dry, but if the shell be moistened or wet, the dried bodies of these animalculæ develope in that water, assume much vitality, and then penetrate the shell and set up putrefaction. Eggs were placed in fluids swarming with different animalculæ, some like corkscrews, which swam by quickly turning round; others, which appeared under the microscope like flukes, but which really had the forms of an egg; some with one, some with two feelers, which swam by switching those feelers into a quick serpentine motion in front of them. These, however, were not able to penetrate the shell of an egg. The third is the fungus decomposition. The spores of this fungus are found everywhere floating in the atmosphere. They settle on the shells of eggs placed in stagnant atmosphere, and send myriads of filaments through the shell in all directions, sometimes binding all sides of the shell together, in all cases converting the white into the consistency of a strong jelly, and often the filaments grow in such immense numbers as to make the whole contents appear like a hard-boiled egg. It is strange that this fungus acts on the air exactly like animalculæ, absorbing oxygen and liberating carbonic acid gas.

MORPHOLOGY OF THE BRAIN.

Professor Cleland, M.D., F.R.S., presented a preliminary notice of some inquiries into the morphology of the brain, and the function of hearing. The address was of a highly technical character, and could hardly be reproduced without the numerous diagrams by which it was illustrated. Some remarks were made on the subject by Professor Huxley and Dr. Carpenter, and in the course of the discussion the question of development was broached. Professor Huxley maintained that the question in discussion was only soluble by a study of the process of development; but Professor Cleland contended that by taking only an embryological view of nature, we were in the position of looking at an unfinished work, instead of studying the completed temple of nature.

Professor M'Alister then exhibited a skull in which the malar bone articulates with the lachrymal—an arrangement only found in the lowest mammalias. In the lowest races of mankind, he said, the very opposite condition seems to prevail, as the malar bone terminated further out than usual.

ON MODERN ETHNOLOGICAL MIGRATIONS IN THE BRITISH ISLES.

Dr. John Beddoe, F.R.S., in a paper on this subject, read in the author's absence by J. J. Murphy, Esq., pointed out that in Britain, as in other countries, there was a constant stream of population towards the capital, flowing from all parts of the country, and comprising a considerable portion of the upper and middle classes. Elsewhere, in Britain and in Europe generally, the rule was that migration took place from poor to rich, from ill-employed to busy and prosperous districts, and instances to the contrary were comparatively rare, or of little importance ethnologically. In Scotland there were two currents of migration, one southward and south-eastward and toward England, the other towards Glasgow. The vigorous, ambitious, and prolific race of the south-east of Scotland was already scattered all over the world. Such names as Scott, Turnbull, Kerr, Douglas, Irving, and Bell afforded sufficient evidence of this; and Ireland swarmed with Armstrongs and Grahams, not all of them, it was true, descendants of voluntary immigrants. The large towns, however, were the great centres of attraction, and the more Celtic of the people furnished the masses attracted. Thus, Glasgow, from the rapid influx of Irishmen and Highlanders, was becoming as Celtic a city as Dublin or Belfast, if one might judge by the evidence of features and family names. With Edinburgh the case was otherwise, though there even the Celtic element was strong in the lower classes, and the agricultural population around had been displaced by Irishmen to a considerable extent; still, the difference of physiognomy and complexion between the street population of the two cities was very well marked, The case of Liverpool was much the same as that of Glasgow. In Manchester and Newcastle, and in most of the colliery districts of the North of England, Irish blood abounded, while the national Irish characteristic of natural eloquence came out in a very curious way, the spokesman and leaders of the colliers and ironworkers in their trade disputes very frequently bearing Irish names. In London Irishmen were not relatively numerous, and Bristol furnished an example of the small importance of mere proximity; for, notwithstanding the easy communication with populous Munster, the Irish element did not exceed three per cent. In Ireland itself—Dublin was, of course, formerly—but Belfast now was the great focus; but in many smaller towns notable prosperity, whether engendered by political or social causes, or by the practical genius of a Teutonic colony, had in the end attracted the neighbouring Celtic, so as almost to redress the ethnological balance. Of this Bandon and Enniskillen were good examples. The ethnological changes were, however, in a great degree limited to towns and to iron and coal districts. In some rural districts of Ireland and Scotland the Celtic element did undoubtedly encroach on the Teutonic, but it was very gradually and slowly done, and the day was yet far distant when the landmarks of race would be obliterated. And even in the towns the rate of progress of this movement could not be very accurately calculated so long as they were without data to show the relative potency of acclimatisation and degeneration determining the respective death-rates of the different elements of urban populations.

THE ANTHROPOLOGY OF PRE-HISTORIC PERU.

Dr. T. J. Hutchinson F.R.G.S., read a paper on the subject. This memoir, read by the author, was illustrated by photographs, diagrams, and sketches of many ruins of pre-historic Peru. With these were illustrations of several items of Mr. Hutchinson's collection of Peruvian antiquities, now being exhibited at the Bethnal Green Museum, in London. The paper commenced by recording how little is known up to the present of the glorious days of Peru, long before the time of the Incas; and the author conveyed his agreement with Mr. Baldwin as to the original South Americans—notably those of Peru—being the oldest people on that continent. He proceeded to show how little dependence was to be placed on the romantic gasconading of the Spanish writers, with regard to the Incas, of whose fabulous origin and mythological genealogy an account was traced by them to a period further back than about seven centuries ago, or near to the time when William the Conqueror came to England. It likewise discussed the writings of various authors of whose works the translations have been recently published by the Halkluyt Society, showing them to be full of anomalies and contradictions, in the vain attempt to make the Incas be considered as the earliest civilised race of Peru. The grandeur in extent of the ancient burial mounds was a wonderful thing. It was shown by the diagrams and illustrations. The colossal work of those done by human hands—and some of them measuring from 20 to 24 millions of cubic feet—showed what a superior race these early Peruvians must have been. The difference in *morale*, as in physique, of the Peruvians and Chinese of the present day was commented upon to prove there could not have been—though supposed by very high authority—a homogenity of origin. The paper further made a comparison of the burial mounds explored by Messrs. Squier and Davis in the valleys of Ohio and Missisippi with those examined by the author in Peru. This showed the great magnitude of the works in the latter country as regarded their size, although in mathematical construction both presented a similarity. A curious feature in the Peruvian mounds, as well as ruins of fortresses, consists in the fact that their terraces, bastions, square, and other architectural features have an almost invariable measurement in multiples of twelve. The pre-historic ruins of Peru, described by Professor Raimondy in his recent work on the mineral riches of the department of Ancachs were mentioned as highly interesting. Extraordinary things are the tombs cut out in the solid rock. But more wonderful still is the fact that these are of a stony formation, entirely different to the geology of the neighbourhood in which they are found, thus evidencing that these immense boulders, which are of Diorite, though invariably observed amongst sandstone strata, have been brought over the mountains and through the valleys of these apparently impassable Andes. The *modus operandi* of such transports is as yet an insoluble problem. One of the rock graves is described as fashioned in the shape of an egg—cut crossways—the upper part serving as a lid to cover the body when deposited within. The author concludes that, until a better system than has hitherto prevailed of examining ruins of burial grounds, mounds, and fortresses shall be adopted, the most we can learn of pre-historic Peru will be little better than guesswork, dreaming, and speculation. The paper touched on the hyperbolical stories about Peruvian gold—rich though the country is in minerals—on the ancient navigation by *halsas* and the wonderful works in art and manufacture of the early Peruvians—"One of these primary tribes of people who, leaving no chronicle or history behind them but their works, have gradually disappeared from the face of the earth by some of those mysterious and inscrutable laws which Divine Providence dispenses for the rise and fall of the races of mankind." The author added that in the "Guide to Belfast," compiled by members of the Belfast Naturalists' Field Club, for the use of members of the British Association, the following statement was made at page 194, under the head of "Sepulchral Monuments": "The popular idea is that all or nearly all the old forts were constructed by the Danes; but this is quite erroneous. The greater number of our ancient national monuments were erected hundreds of years before the landing of the Danes in Ireland." Just such a popular and erroneous idea as this existed in Peru with reference to the great works there being accredited to the Incas whereas they were daily finding out that they were erected, like the Irish forts and mounds, hundreds if not thousands of years before there was an Inca in the land. He added that the process of inhumation used in prehistoric times in Ireland seemed to have been the same as in Peru.

SANITARY LEGISLATION AND ORGANISATION—ITS PRESENT STATE AND FUTURE PROSPECTS.

A paper was read by Dr. Grimshaw (Dublin). The following is an abstract:—Although the Parliamentary session which has just terminated has not been so eventful in sanitary legislation as many sanguine sanitarians anticipated, yet with the small time which Parliament had at its disposal, the extreme hurry of public business, and the difficulties which a new ministry had to deal with in a new House of Commons, a considerable advance had been made in sanitary legislation by the public of the Sanitary Laws Amendment Bill for Ireland. These measures are not, nor do their authors profess that they are, complete measures of sanitary reform, but as her Majesty's ministers have announced their intention of further amending the sanitary laws, both for Great Britain and Ireland at no very remote date, this Bill in legislation may be considered at a suitable time, for considering what has been done, and what yet remains to be done in the way of sanitary reform—in other words, what are the complete requirements of sanitary legislation, how many of these requirements have been met, and what still remains to be provided for. In anticipation of the bringing in of the Irish Public Health Bill of the session, I published some remarks on "Sanitary Legislation for Ireland." In that pamphlet I laid down what I believed to be the requirements of Ireland with regard to sanitary measures, and these seem to be quite applicable to the rest of the kingdom, and have met with such general approval, not only in Ireland but also in England, that I shall adopt them as my classification in my present remarks. These requirements are as follows:—First, a codification, consolidation, and amendment of the existing sanitary laws; second, uniform authorities without clashing of jurisdiction; third, convenient areas of administration with easily workable sub-districts; fourth, a complete executive organisation; fifth, constant supervision by the central authority; sixth, security for a certain amount of independence for the local officers of the local authorities; seventh, all sanitary law should be compulsory except certain permissive powers granted to the central authority. Following the plan I have announced, let us consider how many of these requirements have been fulfilled, and to what extent have others been met, and what still remains unprovided for. 1. The codification and amendment of sanitary law has been distinctly promised by her Majesty's ministers, and the materials already, to a great extent, exist in the recommendations of the Royal Sanitary Commission, and the Bill of Sir Charles Alderley, founded upon these recommendations. 2. Uniformity of authority seems scarcely possible without uniformity of districts, but I believe uniformity of authority might be accomplished by the complete union of authorities and appointment of committees. 3. Great difficulties beset the formation of uniform districts, and these difficulties are especially great in England, where the great variety and antiquity of the present divisions of land can hardly be modified without giving rise to serious complications, only to be got over by careful inquiry, and by a boundary commission. England might well copy Ireland in this matter. 4. A complete executive organisation might be carried out without much difficulty according to the following pattern: First, the central authority; second, the chief medical officer of health; third, the rural districts medical officers of health; fourth, the urban district medical officers of health; fifth, local medical officers of health; sixth, inspectors of nuisances,; seventh superintendent inspectors of nuisances. The remaining requirements are sufficiently obvious, and will require less detailed attention than the foregoing.

RECLAMATION AND PURIFICATION OF THE PONTINE MARSHES.

Dr. Henry M'Cormac sent forward a paper on this subject. The paper set fourth that the area of the Pontine Marshes is produced by the alluvium from the Appenines, and the marshy condition by the absence of sufficient drainage. He would drain and sanify the marshes by a well-concerted system of drainage simultaneously carried out over the whole surface by the formation of roads, the construction of proper dwellings, the judicious introduction of plants presumed to be antiperiodic, particularly the *eucalyptus globulus*, and steam culture generally.

Mr. Moggridge said to his own knowledge the eucalyptus globulus had a most extraordinary effect in draining up marshes, and in tending to the salubrity of an unhealthy district.

General Cotton spoke of the great use of the tree in India, and the Bishop of Edinburgh referred to the success which had attended its planting in South Africa.

LONGEVITY.

Sir Duncan Gibb, M.D., L.L.D., then read a paper upon "Longevity at Five Score Eleven Years." He said he had brought forward nine examples at previous meetings of the association of persons who had overstepped the century by several years, and now his tenth instance was that of a female still living at Tring, in Hertfordshire, who attained her hundred and eleventh birthday in April last. Tables were quoted containing 84 instances of persons whose age extended from 107 to 175; 40 of these were under 130, and 44 above that age, and the author considered that three-fourths of the total number might be taken as correct. The proof of that was the instance he brought forward of Mrs. Elizabeth Leatherland, now alive and in her 111th year, her baptism being recorded in the register of the parish of Dover, in Kent. This was confirmed by the drowning of her son and his family, and other persons to the number of 37, at Hadlow, in Kent, in 1853, in the hop country, by a catastrophe mentioned and described in the papers of the time. Her son was then fifty-nine, and if now alive would have been eighty, his birth occurring when his mother was twenty-nine or thirty. Other corroborative circumstances were stated, clearly establishing the great age of the old dame, who was of gipsy descent. The author then described her condition, the result of a careful personal examination at Tring in October, 1873. She walked with the aid of a stick, was short in stature, bent with age, complexion brownish, countenance a series of thick folds, and she had several sound teeth. She chatted away continually in a clear, distinct voice, and was in possession of all her faculties, though somewhat impaired. She was a little deaf, and took snuff; her skin was as soft as velvet, and her hair quite grey. She was thin, and the muscles of her neck stood out in bold relief. All her internal organs were in perfect health, lungs, heart, &c., and her pulse was as regular and as soft as in a girl of eighteen. In fact, the changes of old age as met with in persons from seventy to eighty had not taken place in any of the tissues of the body, being thus similar to the nine other cases examined by the author. She was, of course, feeble; but, taking all things together, that did not prevent her reaching to her present exceptionally great age. Her age, the author said, taught us two lessons—one was the absence of senile changes for the most part in centenarians, which was the chief reason of their attaining to such a great age; the other the occurrence now and then of instances wherein even six score years is reached, if not more. To ignore all past cases of extreme ultra-centenarian longevity because we cannot get at their proofs at the present day he considered unphilosophical and unscientific, for there existed as conscientious and painstaking inquirers after truth then as exist now, whose statements and recorded facts must not be wholly ignored, as every honest investigator well knows.

ABOUT BOOKS.

Clinical History of the Medical and Surgical Diseases of Women. By Robert Barnes, M.D., F.R.C.P. London. 1873.

The work is divided into fifty-two chapters, some of the earlier of which are occupied in descriptive anatomy of the ovaries, Fallopian tubes, uterus, and vagina. Chapter vi. treats of the conditions indicating the necessity for examination, and the author introduces a new word into medical literature—*Dyspareunia*—which means pain in congress. Chapter vii. speaks of the significance of leucorrhœa. Chapters ix., x., xi., and xii. treat of watery, gaseous, and bloody discharges, and pain. Chapters xiii. and xiv. treat of pain in congress and sterility. Chapters xv. and xvi. treat of the instruments required for diagnosis, and the way to use them. Chapters xvii. to xxiii. treat of diseases of the ovaries. Chapter xxxiv. of diseases of the Fallopian tubes. Chapter xxxv. of diseases of the broad ligaments. Chapter xxxvi. of extra-uterine gestation. From chapter xxxvii. to chapter xl. the diseases of the uterus are spoken of. Chapters xli. and xlii. speak of perimetritis and pelvic hæmatocele. Chapters xliii. to xlvi. are dedicated to displacements. Chapters xlvii. and xlviii. speak of fibrous tumours and polypus; chapter xlix. of tubercle; chapter l. of cancer; chapter li. of diseases of the vagina; and chapter lii. of diseases of the vulva.

"The division of leucorrhœa," says Dr. Barnes, "into uterine, vaginal, and vulvar, as propounded by Donné and Tyler Smith, is based not less on clinical than on anatomical foundation . . . We frequently find associated with leucorrhœa patches of the surface of the vaginal portion of the cervix denuded of epithelium—small ulcerations they may be called—a state of tumefaction, even redness. Are these caused by the leucorrhœa? In the majority of cases they assuredly are not . . . Dr. Tyler Smith submitted that sometimes the discharge possessed acrid or irritating properties capable of directly inducing ulcerations, granulations, follicular cysts, and other disorders—that is, he looked upon leucorrhœa as a primary disease. This opinion seems to me to want confirmation."

His treatment of leucorrhœa is general and local. "We must not too harshly assume that the treatment of strumous or syphilitic leucorrhœa resolves itself into the constitutional treatment of the struma or the syphilis." Solutions of acetate of lead, sulphate of zinc, alum, oak-bark, and tannin are praised, and for topical use to the interior of the uterus sulphate of zinc, nitrate of silver, alum, and iodine. Strychnine, quinine, and arsenic are used as tonics in fit cases.

In the treatment of hæmorrhages Dr. Barnes recommends, when no remediable cause is discoverable, plugging the vagina. Clots of blood are first removed by the hand, and the vagina washed out with cold water. It is preferable to plug by aid of a speculum, and pieces of lint may be used, or linen and silk handkerchiefs. In a few hours these may be removed, and the uterus may then in certain cases be dilated with a tent, or incised at its external mouth. In passive hæmorrhages ergot, digitalis, cinchona, turpentine, ipecacuanha, acetate of lead, tannin, alum, and dilute sulphuric acid are praised.

In his chapter on pain the author speaks of vaginismus and mentions the cases where there may be observed a dark red angry-looking ring of inflammation around the orifice, sometimes even abrasions or slight fissures, which easily bleed on being washed. There is intolerable hyperæsthesia. In such cases Dr. Barnes recommends two or three incisions to be made through the skin on either side of the fourchette, and excision of any remains of the hymen or carunculæ with the scissors, in the form of a ring. Scanzoni is cited as stating that he never uses the knife in such cases, but employs rest, lotions, and dilatation; but Barnes has found these inadequate in some cases.

In treating of sterility six causes are given. By far the most common associated conditions with sterility, in his experience, are congenital narrowing of the os externum and retroflexion of the uterus. These conditions are frequently combined, and are commonly attended by dysmenorrhœa.

Dysmenorrhœa is often presumptive of sterility. "So preponderating is the association of a minute os externum and retroflexion, separately or combined, that in any given case of a woman who remains sterile five years after marriage and suffers from dysmenorrhœa, it may be predicated with almost certainty that one or other of these conditions exists." He relates the case of two sisters with small os externum and retroflexion, both married and sterile. In both Dr. Barnes divided the external os and corrected the retroflexion by a Hodge pessary, and both became pregnant. He is inclined to doubt that sterility in the male is so rare as it is represented. In crypt-orchids there are no spermatozooids.

Chapter xv., treating of the bag of the gynæcologist, is very graphic, but rather alarming, from the number of instruments mentioned. Fergusson's speculum and Henry Bennet's are praised, as also Cusco's. Kuchenmeister's metrotome scissors are employed by the author, with a slight modification of his own. He approves of Weiss's wire écraseur for polypus, and speaks well of the sponge-tent carrier, and of Higginson's vaginal syringe, with a four-inch vaginal tube.

"The influence of protracted amenorrhœa," says Barnes, "upon the nervous system is always prejudicial, and sometimes deplorable, and is very liable to merge into pulmonary consumption. The treatment of acute amenorrhœa, if resulting from cold, requires warm baths, turpentine, enemata, and sudorifics. When chronic, iodide of potassium, iron, strychnine, and suitable hygiene are required."

In cases of imperforate hymen the author makes a very small opening in the membrane, and lets the fluid gradually drain away. But death has followed all kinds of treatment.

The chapter on dysmenorrhœa is very full, and perhaps the most valuable in the book. The author disagrees with those who insist on the frequency of stricture of the os internum. Dilatation by tents, &c., is not satisfactory. In a few days the canal has contracted to its old dimensions after dilatation, and numerous accidents, such as septicæmia and cellulitis, follow the use of sponge-tents, and even laminaria tents. Dr. Barnes does not like double metrotomes, but uses scissors. The patient keeps her bed for four days or a week, and immediately after the operation it is generally useful to insert a Wright's stem pessary. Success is greater if the patients are young. Barnes agrees that the cure of sterility is not nearly so frequent as the cure of dysmenorrhœa; but in a considerable number of cases conception does follow. An objection urged by the advocates of dilatation against incision is that they frequently contract again; but then it should be again had recourse to. Barnes uses a speculum, a uterine sound, metrotome scissors, and a Sim's tenaculum hook for this operation. He does not use chloroform, as the operation is rarely very painful. The sound is introduced to ascertain the direction of the cavity of the cervix. The speculum is introduced, and the plain blade of the scissors is passed into the cervix from half an inch to an inch, the part intervening between the blades being divided by a sharp stroke. Thus, only the vaginal cervix is divided. It is enough to give a good transverse slit, or os tincæ. Bleeding generally stops in a few minutes; if not, a small piece of lint dipped in perchloride of iron may be introduced.

Dr. Barnes next treats of ovarian and membranaceous dysmenorrhœa. "In the male sex," says Barnes, "there is no epochal limitation of sexual life. There is nothing to compare with the almost sudden decay of the organs of reproduction which marks the middle age of women." He is sanguine, or sanguinary enough to advise in cases of disease at the menopause, accompanied with plethora, abstraction of eight or ten ounces of blood from the arm; but compounds for some leeches if modern practitioners do not like bleeding. Issues in the neck are also advised.

The chapters on ovarian dropsy and other diseases of the ovary are, as might be expected, written in a masterly manner, and the latest statistics are given. The chapters, too, on pelvic peritonitis and hæmatocele are admirable, and should be studied by all.

Among the best chapters in the work are those which treat of prolapse, retroversion, retroflexion, anteversion, and anteflexion. The plates in these chapters are most graphic. The treatment of prolapse and hypertrophy of the uterus is sometimes heroic enough, and the author occasionally seems to practise amputation of the cervix uteri. In all cases of procedentia the bladder should be periodically emptied, and the uterus should, if possible, be replaced and kept up by a a pessary of some kind or other. It is one of the many controverted points in diseases of women whether the use of pessaries in prolapse is or is not a scientific proceeding. "If pessaries are found useful," says Dr. Barnes, "it matters little whether they satisfy the requirements of science. That thousands of women do find comfort and benefit from their use is a fact too notorious to be disputed. I add my testimony to that of Dr. West, Dr. McLentick, and many others, who have seen not only comfort, but cure result from pessaries."

The operations performed for prolapse are uncertain and not free from danger. There are six kinds of pessaries described, and Hodge's pessary seems to be the greatest favourite with Dr. Barnes. Zwancke's pessary is not free from danger. Local astringents may be used as adjuvants.

When the Hodge fails the stem-and-cup pessary is useful. When this instrument is *in situ* the vaginal portion of the cervix rests in the cup and the narrow stem is grasped by the vagina. When the power of the vagina is insufficient to grasp the stem its retention is aided by external elastic bands carried up in front and behind, and attached to an abdominal belt. The elastic bands, yielding at each inspiration, permit the natural ascent and descent of the uterus, and obviate the concussion and violence which rigid external supports would cause. The pessaries should be of vulcanite.

"Before the use of Hodge's and Zwancke's pessaries the use of external supports was more general than it is now. Hull's utero-abdominal supporter is the best known; and one known as Ashburner's pad is good. Each of these tightly embraces the hips. Hull's is furnished with a large padded metallic plate fitted over the pubes, and Ashburner's is fitted with a similar plate fitted over the sacrum. The chief utility of these metallic plates is, that by their firm yet gentle counter-pressure they relieve the sympathetic pains referred to the back in one case, or the dragging and distress in the region of the ovaries in the other. To both of them a strap passing between the legs with a perineal pad is adapted, and though it can be dispensed with at pleasure, will be found of great service in all cases of considerable relaxation of the vagina."

When treating of anteflexion, anteversion, retroversion, and retroflection, Dr. Barnes gives the usual rules for diagnosis of these very common malpositions of the uterus. His treatment is almost entirely that of Hodge, and with the exception of recommending the elastic horse-shoe pessary of Professor Thomas in anteversion, there is not much novelty.

In his chapter on cancer of the uterus Dr. Barnes praises the use of bromine, as recommended by Drs. Routh and Williams, and recommends amputation of the cervix in some cases.

The work is thoroughly up to the day in all that relates to the very important speciality of the diseases of women. It should, we think, be perused by all physicians, in case they make errors in diagnosis from not knowing the symptoms to be expected in diseases of the generative organs in women. Perhaps in some future edition Dr. Barnes may have time to reduce the size of the work to more moderate dimensions. Great books are great evils, because, alas! there is so much to be read.

Annual Report of the Supervising Surgeon of the Marine Hospital Service of the United States. 1873.

This is a handsome volume, illustrated by photographs and several plans of hospitals. The report contains much valuable matter, a carefully prepared table of the diseases admitted into the different marine hospitals, a chart of yellow fever in the United States, giving elevations above sea-level of localities where yellow fever has appeared since 1668, and various important papers on medicine and surgery.

Clinical Medicine: Lectures and Essays. By Balthazar Foster, M.D. London: J. and A Churchill. 1874.

Dr. Foster's name is so well known to the profession that any lengthened notice of the work before us will, we opine, be unnecessary. The lectures which compose the work have already appeared in various medical journals. A larger experience and more lengthened study of the subjects treated have, however, enabled the author to make many additions to the original articles. We need hardly say that they are one and all really valuable contributions to clinical medicine. His advice has been of service and acted upon by a large number of physicians, not only in this country, but abroad—for instance, the lecture "On the Use of Ether with Cod-liver Oil in the Treatment of Phthisis," which is now generally recognised and prescribed; again, "Digitalis and Heart Disease." "The Synthesis of Acute Rheumatism," and his observations "On Diabetes and its Treatment," are most valuable. The rare disease known as "Duchenne's paralysis" is carefully treated of. Rather than give extracts from the work before us, we advise our readers to purchase it for themselves, and we affirm that they will not be disappointed.

Sulphur in Iceland. By C. Carter Blake, Doct. Sci. London: E. and F. N. Spon. 1874.

Dr. Carter Blake is well known as an anthropologist. In the pamphlet before us he gives many interesting facts regarding sulphur. The pamphlet is illustrated by several maps. It well repays perusal.

IN THE LABORATORY.

MEANS OF DISCOVERING WHETHER RED WINES ARE ARTIFICIALLY COLOURED OR NOT.

M. de Cherville, in *Le Temps*, gives the following useful hints for deciding the above:—"Pour into a glass a small quantity of the liquid which you wish to test, and dissolve a bit of potash in it. If no sediment forms, and if the wine assumes a greenish hue, it has not been artificially coloured; if a violet sediment forms, the wine has been coloured with elder or mulberries; if the sediment is red, it has been coloured with beetroot or Pernambuco wood; if violet-red, with logwood; if yellow, with 'phytolac' berries; if violet-blue, with privet berries; and if pale violet, with sunflower."

NOTES, NEWS, AND GOSSIP.

THE DANGER OF USING SHOT FOR CLEANING BOTTLES.

Fordos has recently directed attention to the dangers of lead poisoning where shot are used for cleaning bottles that are to be used for wine and other beverages. When shot are placed in a glass with water, carbonate of lead is at once formed, a portion of it being noticed as a precipitate in the water, while another portion of it attaches itself as a thin film to the sides of the vessel. This film adheres so firmly to the glass that it cannot be removed by rinsing with water alone, an acid being required to remove it. When shot are used for cleaning bottles which are afterwards well rinsed out, the carbonate of lead suspended in the water will be removed, but that portion which is attached to the sides of the bottle remains, and is afterward dissolved by the liquid placed in the bottle, if it possesses a sufficient solvent power. If the shot are only shaken up with water for a short time, it is scarcely possible for the carbonate of lead to become attached to the sides of the bottles, but oftentimes the shot are left in the bottle with the water for some time. Besides, the rinsing is not always done as carefully as it should be, and the carbonate of lead suspended in the water is not all removed. Fordos took four half-pint medicine glasses that had been cleaned with shot, and in one he placed white wine, in another red wine, in the third quinine wine, and in the fourth vinegar. After standing two days each was found to contain a considerable quantity of lead.

Another danger might also arise from shot getting lodged in the narrow creases at the bottom of certain bottles, when the action of an acid upon it would dissolve not only the lead but also the arsenic which is always present in shot in sufficient quantity to render the liquids poisonous.—*Druggists' Journal*, April, 1874.

OBITUARY.

Atkinson.—On the 1st August, Robert Atkinson, L.S.A.L., House Surgeon to the Hull and Sculcoates Dispensary, aged 78.

Barlow.—On the 25th July, W. R. Barlow, M.R.C.S.E., of Writtle, Essex, aged 83.

Carlill.—On the 22nd July, at Weymouth Street, Portland Place, John Burford Carlill, M.D., aged 60.

Durham.—On the 4th August, at Sandford, co. Dublin, Andrew Durham, Esq., M.D., Deputy Inspector-General of Hospitals, late her Majesty's Bombay Army, aged 61.

Ferguson.—On the 6th August, at Prospect, Mullingar, Joseph Ferguson, M.D., aged 73.

Hayman.—On the 2nd August, at West Malling, Charles C. Hayman, M.D., aged 48.

Howatt.—On the 16th July, H. R. Howatt, M.D., of Cumberland Street, Glasgow.

Martindale.—On the 21st July, John Walker Martindale, M.R.C.S.E., of Patterdale, Westmoreland, aged 36.

Maule.—On the 9th August, at Bath, John Templeman Maule, M.D., late Deputy Inspector-General of Hospitals, Madras Army, aged 73.

Norton.—On the 1st August, at Nantglas, Llanelly, Carmarthenshire, John Howard Norton, M.D., aged 59.

Rix.—On the 17th June, on board the Royal Mail Steamship *Nile*, off Greytown, Central America, Rich. Avery Rix, M.R.C.S.E., late Medical Officer to the Chontales Consolidated Mining Company, Nicaragua, aged 31.

Sandwith.—On the 25th July, at Todwick Rectory, Sheffield, Humphry Sandwith, M.D., Consulting Physician to the Hull General Infirmary, aged 82.

Schlesinger.—On the 29th July, B. M. M. Schlesinger, M.R.C.S.E., House Surgeon of St. Mary's Hospital, aged 21.

Traill.—On the 21st July, at Stromness, Orkney, William Traill, M.D., aged 43.

Watkins.—On the 27th July, John Watkins, F.R.C.S.E., of Thatcham, Berks, formerly of Falcon Square, aged 68.

TO ADVERTISERS.

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THE DOCTOR.

LONDON, OCTOBER 1, 1874.

Multum in parvo.

THE NORWICH MEETING.

We have had almost a surfeit of congresses and meetings, from the science one of Great Britain, reported in our last, to that of France, held at Lille.

The medical meeting at Norwich, though not nearly so impressive as the really brilliant medical section at Lille, got through a good deal of work in the sections. We furnish this month some selections from these. It is the less to be regretted that we have not space for a complete account of the papers read, inasmuch as they will appear during the ensuing year in the Journal of the Association. We feel, however, that it is a pity so many of them will be so long delayed. Far better, abstracts ought at once to be published in the Journal of the Association, and slips should be sent to the other papers. It is a poor apology for the want of journalistic courtesy to say they may be had by asking for. We should like, too, to see all other matters relating to the Association made more public, so that the profession might judge of the worth of its work. To compete with the other weeklies ought not to be the main object of a journal established for the sake of recording the proceedings of a great medical association. If this object were kept in view, lectures, reports, and other non-association matter—to say nothing of puff paragraphs—would not be allowed to crowd out for months together the papers read by members. We demand that our own material should have the preference in our own journal.

CHRONICLE.

DR. SEE ON BELLADONNA AND NICOTINE.

Dr. See, in a lecture at the Hôpital de la Charité, says that atropine is the most complete antagonist of muscarine, that cardiac medicine spoken of by O. Schmiedeberg in 1869. Six or seven years ago, Meuriot, one of Dr. Sée's pupils, noticed that atropine caused acceleration of the movement of the heart. The ganglia which terminate the pneumogastric nerve are paralysed. If muscarine and atropine are successively employed, we notice that the heart, arrested by the effect of the muscarine, begins to palpitate with atropine; but muscarine cannot arrest the palpitations of an atropised heart. The paralysing action of atropine on the pneumogastric is, then, very energetic. Atropia has besides the power of exerting the blood-vessels and making them contract rhythmically. To this commencing contraction of the vessels let us add the most remarkable effect of this drug, the dilatation of the pupil, which takes place from contraction of the dilating muscle, excited by the sympathetic. There is also paralysis of the sphincters, of the pharynx and larynx, and of the voluntary muscles, with impaired sensibility.

Nicotine is the neutral principle of tobacco, and is a vascular poison above all, but also a cardiac poison. If a small dose of nicotine be injected into an animal, we notice first a retardation of the heart's action, and next, augmented pressure in the vessels. If the animal be opened, the vessels are found contracted. There is, in a word, enlargement of the vaso-motor nerves, and of the vessels, and also tetanic rigidity. When there is a strong dose of nicotine, we notice the inverse: the heart's action is notably increased, and there is complete relaxation of the vessels, depending on fatigue of the muscles of the vessels; the heart's action becomes accelerated, because then nicotine acts like atropine, by paralysing some part of the suspending system. Ordinary smokers have palpitations, or slow pulse sometimes, 48 pulses per minute, with intermittences; extravagant smokers speak of palpitations with rapid pulse, 130, 140, 150 pulsations per minute.

Roux, an old professor of the Faculté de Médecine, considered that smokers were "gredins;" but that was forty years ago. Muscarine, when injected, will lower the pulsations caused by nicotine.

ACTION OF REMEDIES.

In a lecture at the Charité Hospital, Paris, Professor G. Sée divides remedies, according to their fundamental action, into four great classes:—

1. *Nervo-muscular medicaments*: six categories—

(a) Medicaments which paralyse the motor nerves; type—curare.

(b) Medicaments which paralyse the muscles; type—veratrina.

(c) Medicaments which paralyse the muscles of the heart; prototype—digitalis.

(d) Vascular medicaments; types—belladonna, bromide of potassium, ergot of rye, and even tobacco.

(e) Medicaments—motors of the spinal marrow; types—strychnine, morphine.

(f) Anæsthetic medicaments.

2. *Trophic medicaments.* A sub-class: *distrophic medicaments.*

3. *Medicaments acting on the emunctories*; examples—diuretics, diaphoretics, purgatives.

4. *Medicaments which modify the system by their thermic, chemical, and physical properties*; such as *hydrotherapy, derivatives, electricity.*

CHLOROFORM DURING SLEEP.

Dr. W. R. Cluness reports in the *Pacific Medical and Surgical Journal* two cases in which chloroform was administered and anæsthesia produced during sleep. One case was that of a girl of eight years, and the other a girl two and a half years of age. In each case a surgical operation was performed. Neither of the patients offered the least resistance or showed any signs of consciousness in passing under the influence of the chloroform.

SWALLOWING A TOOL-CHEST.

It is reported that in the different prisons of Paris there are five or six deaths every year from the effect of swallow-what is known as an "escape-box." This remarkable box is made for the special accommodation of prisoners. It is of polished steel, about three inches long, and contains turn-screws, hammers, silk thread, and other implements necessary for escape. The box appears to be easily swallowed, but sometimes fails to reappear as intended, and the death of the victim is the result. But, when it does pass the bowels, the lucky prisoner is prepared to cut the thickest iron bars and set himself at liberty.

CROUP.

What are *diseases which can still simulate croup ?*

Dr. H. Roger, of Paris, gives the following reply to this question.

1. (*Œdema of the larynx ;* but it is exceedingly rare amongst children, and by the examination of the superior part of the arytenio-epiglottic folds all doubt is removed.

2. The introduction of *foreign bodies*, such as a cherry-stone, a bean, &c.; but there is no fever ; besides, recollection comes in aid, as well as the other signs of which we have spoken.

3. *Retro-pharyngeal abscess*, which gives rise to these symptoms—cough, fever, difficulty of respiration, suffocation ; but the examination of the throat suffices to put an end to all idea of croup.

HÆMORRHAGE OCCURRING AFTER DENTAL OPERATIONS.

In a clinical lecture delivered at the Dental Hospital Mr. Alfred Coleman described some troublesome cases of hæmorrhage treated by himself. The first was one in which it became necessary, after the extraction of a lower molar, to open an alveolar abscess which had formed. For this purpose a "Paget's knife" was used. There was moderate bleeding, but no pus evacuated, although the knife passed into a softened mass. Two days afterwards the swelling had considerably increased, and threatened to burst. A fine probe was therefore passed into the feebly united incision ; it slid into a place from which, on removing it, arterial blood spurted out *per saltem*. The bleeding was considerable, and it became evident that in making the incision the facial artery, or one of its largest branches had been wounded, and that consequently a traumatic aneurism had formed. A very troublesome case was anticipated, but after a time the bleeding quite ceased.

The next case mentioned was one of secondary hæmorrhage, occurring in a boy fourteen years of age, from whom a lower molar tooth had been removed on the previous day.

He woke up in the middle of the night with his mouth full of blood, and the bed and clothes completely saturated. When seen he was lying on his back, blanched, cold, almost pulseless, restless and delirious, and complaining that he could not see. It was quite evident that he had lost a very large quantity of blood. Without altering his position, large pieces of coagula were removed from his mouth, and the aveoli where the tooth had been removed thoroughly cleared out, and a pellet of matico-leaf, previously softened in water, firmly inserted into each. Lint was then placed over these, a little brandy administered, and the jaws brought firmly together. He was permitted the access of plenty of fresh air, but was made warm in bed with hot water bottles. Subsequently the strongest extract of meat was given to him.

Another case was that of a gentleman's servant, with hæmorrhage arising from the gum between a first and second molar of the upper jaw without apparent cause. It had resisted for hours the application of astringents and escharotics. The first molar being defective, was removed, and its alveolus plugged with matico and lint, after which no further bleeding occurred. The plug should always be allowed to come away of its own accord ; and in cases where all local means prove unavailing, Mr. Coleman strongly advises ligature of the external carotid, instead of the easier operation of tying the common carotid artery.

INJECTIONS INTO THE VEINS.

La France Médicale reports the following conclusions of Professor Robin from a new series of experiments :—

1. The injection of water into the jugular vein in doses equal to one-thirtieth or one-fiftieth the weight of the body, will kill a rabbit.

2. When the injection is made in the external saphenous vein, it will be necessary to inject as much as one-tenth.

3. Injections of water either in the peritoneum or the veins, equal to one-eighth the weight of the body, will not kill dogs ; at one fifth, death is by hæmorrhagic rupture ; but the phenomena of uræmia have not been observed in any of the animals that died during these experiments.

4. Water injected into the blood, as Richardson had already observed, acts on the red globules, of which it injures the structure, and probably renders them unfit for the gaseous changes which ought to go on in them. The idea that death is caused by an affection of the nervous system cannot be admitted, on account of the absence of encephalic lesions.

5. Death probably comes, in the case of animals subjected to injections in the jugular vein, by the difficulty of respiration, due to the abrupt and continued arrival in the pulmonary system of blood charged with too great a proportion of water.

6. If we reflect that in twenty-four hours a dog only excretes 22 c.c., 5 of urine for every kilogramme of his weight, and that in these experiments injections have been made equal to 100, 125 centimetres cubes of water per kilogramme, we can understand how difficult it is to admit as the pathogeny of uræmia the increase of the intra-vascular pressure under the influence of the suppression of urine bringing on œdema and anæmia of the brain.

7. Traube's doctrine, then, judged by these facts, does not appear to be the true expression of the physiologico-pathological phenomena.

SUBLINGUAL TUMOURS.

The *Boston Med. and Surg. Journal* reports the case of a sublingual tumour of ten years' growth, in a woman aged twenty-five. It increased in size until eating and speaking were almost impossible. It presented a uniformly smooth surface, except where deeply adherent, was elastic and fluctuating ; the tongue was pushed up to the palate, and could not be seen when the mouth was opened.

An incision was made over the tumour, and the lateral adhesions broken down with a director ; it was then dissected from its deep attachments, which extended nearly to the hyoid bone, and partial division of the genio-hyo-glossus was necessary before its removal could be effected. The growth was as large as a duck's egg, encysted, evidently congenital, and contained sebaceous material rolled into small balls.

In the same journal we find a similar case of sublingual tumour, in a man, seventy-three years old ; of gradual growth ; unaccompanied with pain ; one year's duration ; the size of an English walnut ; situated under the tongue ;

to be felt within the mouth, and from the outside in the submaxillary triangle. From the probability of troublesome hæmorrhage, it was thought judicious to attack the tumour from the outside. This was done by a curved incision just above the digastric muscle, through the skin and platysma; the facial artery and anterior jugular vein were tied, cut, and turned one side to make room for the deeper dissection; the submaxallary gland was raised and the deep fascia opened. The operator then passed his finger into the mouth and pressed the tumour down; it was seized with double-hook forceps, the deeper attachments cautiously divided, and its removal accomplished. Under the microscope, the growth proved to be a lympho-sarcoma.

INJECTION OF HYDROCHLORATE OF QUININE INTO THE TRACHEA IN MALIGNANT INTERMITTENT FEVER.

M. Jousset relates in the *Gazette Médicale* two cases in which he passed a trocar of a syringe into the trachea about a finger's breadth below the cricoid cartilage, and injected quinine, in one case six drachms and a half of a solution of one part to ten, and in the other, that of a child aged twelve years, three drachms and a half. The injections were made drop by drop, and were attended with little or no pain. In cholera, hydrophobia, and tetanus, as well as in malignant intermittent fever, he thinks the plan may be useful.

HYPODERMIC INJECTION OF QUININE IN THE TREATMENT OF INTERMITTENT FEVER.

Dr. Frederick Lente, in the *New York Medical Journal* for March, recommended the following formula:—

℞ Quiniæ disulph., gr. 50;
Acid. sulphuric. dil., ♏100;
Aquæ fontanæ, ℥i.;
Acid. carbolici, ♏v. Solve.

The quinine and water are heated to the boiling point, in a porcelain dish, over a spirit lamp; the sulphuric acid is then added, stirring with a wooden spatula; the mixture is then filtered into a bottle, and the carbolic acid added.

From 20 minims to a drachm of the above solution may be used, according to the severity of the attack.

Dr. Lente has used this remedy upwards of 150 times. In only one case diffuse cellular inflammation of the arm occurred, and in another, anæsthesia, followed by dry gangrene of a small portion of cellular tissue. The needle should be gold, and the piston kept well oiled. The best time for administering the injection is just prior to or during the attack.

COMPARATIVE OBSERVATIONS ON THE PHYSIOLOGICAL ACTION OF CHLORAL AND BROMAL HYDRATES AND IODOFORM.

Dr. John M'Kendrick lately read before the Medico-Chirurgical Society of Edinburgh a paper on this subject, which has appeared in the *Edinburgh Medical Journal*. He thus compares the action of bromal hydrate and chloral hydrate:—

1. Bromal hydrate is a more active substance physiologically.
2. Chloral hydrate produces, in small doses, or soon after a large dose, marked hyperæsthesia, followed by anæsthesia. Bromal hydrate never produces hyperæsthesia, and anæsthesia only when the animal is in such a state of coma that there is no hope of its recovery.
3. Chloral hydrate does not usually produce great contraction of the pupil. Bromal hydrate always does.
4. Chloral hydrate acts chiefly on the cerebral hemispheres, and never, so far as the author knows, has been known to cause convulsions. Bromal hydrate acts less vigorously on the hemispheres, and more on the ganglia at the base of the brain and on the spinal cord, the animal frequently dying in a state of opisthotonos.
5. After death from chloral hydrate, fluid is rarely found in the shut sacks of the body. In the case of bromal hydrate, fluid is almost invariably found.
6. Chloral hydrate does not usually stimulate the salivary glands to the same extent as bromal hydrate does, but, in this instance, there are exceptional cases in which chloral hydrate causes excessive secretion of saliva in animals.

ENEMATA OF IPECACUANHA.

M. Chouppe states in the *Bulletin Gén. de Thérapeutique* that ipecacuanha given in enemata is of great value in the treatment of the diarrhœa of tuberculous patients, and in the choleraic diarrhœa of young children. Thus given, it does not disorder the stomach. He uses 20 grammes of bruised ipecacuanha root, boiled in 500 grammes of water, divided into three parts, each part being boiled with the root for ten minutes. The three decoctions are then mixed, and boiled down to 240 grammes; this suffices for two enemata, one of which is administered at about 8 a.m., the other at about 8 p.m. Vomiting did not occur in any case.

THE EFFECTS OF ALCOHOL.

The Neurological Society of New York has lately held a debate on this subject. There is a full report in the *Psychological and Medico-Legal Journal*; and we print in another page of this number of The Doctor a careful review of the discussion kindly furnished by Dr. Drysdale.

At a subsequent meeting it was announced that a committee of five members had been appointed to investigate the action of alcohol upon the system. The members of the committee, and the subjects for research assigned to them, are as follows:—

1. Dr. F. D. Lente. The effects of alcohol upon the system in general, and upon the several organs of the body (except those of the nervous system), and its value as a therapeutic agent.
2. Dr. William A. Hammond. The effects of alcohol upon the brain and mind.
3. Dr. T. M. B. Cross. The effects of alcohol upon the spinal cord.
4. Dr. T. Edwards Clark. The effects of alcohol upon the ganglionic nervous system.
5. Dr. F. Le Roy Satterlee. The effects of alcohol upon the peripheral nervous system.

So far as possible the conclusions are to be based upon original investigations, and these are to be conducted with every precaution to guard against erroneous results. The object in view is, if possible, to ascertain the truth relative to the influence upon the nervous system of a most important and powerful agent.

It is recommended to the society that authority be given to each member of the committee to associate with himself such medical gentlemen in or out of the society as he may consider capable of acting as collaborators.

By way of completing the subject, we add some account of other recent literature respecting alcohol.

ALCOHOLISM IN THE UPPER CLASSES IN FRANCE.

M. Leudet, of Rouen, has just laid before the Scientific Congress held at Lille the results of observations on this subject amongst his own private patients. The first point he drew attention to was the increasing number of cases of alcoholism amongst the upper classes, and the difficulties attending its diagnosis.

Some of the most important characteristics were dyspeptic troubles, ulcers of the stomach, alternately appearing and disappearing until hæmatemesis took place, cirrhosis and affections of the liver generally, diarrhœa, paralytic affections, gout, &c.

Amongst other facts collected were the two following :—

On the one hand, a number of patients, belonging to the working classes, were constantly taking a large quantity of alcohol at longer or shorter intervals, but sometimes increased to a great amount, with bad, or totally insufficient food—conditions likely to cause changes in the mucous membrane of the intestinal canal and in the liver.

On the other hand, there was the constant use of small doses of stimulants at very short intervals, with a sufficient supply of good nourishment, occurring chiefly among the better class of patients.

In the latter cases the most obvious forms of interstitial inflammation of the liver were observed, not accompanied by any severe affections of the intestinal mucous membrane.

It was found that the better class of patients resisted the action of alcohol for a much longer time ; whilst the poorest fell sometimes rapidly into a state of cachexia.

M. Leudet also referred at some length to the influence of climate, and believed that the different changes observed in various countries were due rather to the kinds and quality of alcoholic drinks in use by the different populations.

ALCOHOL AND CONSUMPTION.

Alcoholic phthisis has been for many years well recognised. The following case, related in *Le Progrès Médical* of October 22, is interesting :—

A man, æt. 41, entered the Hôtel-Dieu, under Dr. Moissonet, on the 15th April, 1874. He related how that on the 18th April he had to support a violent shower of rain, which penetrated his clothing. When he got home he was taken with a shivering fit of a violent and prolonged character, accompanied by stitch in the side below the right breast. Then the respiration became painful, and frequent, and the cough, which appeared on the morrow, was very painful, and followed by frothy sputum, mingled with blood. To these phenomena were added an intense fever and violent headache, which prevented him from working.

The patient mentioned that he had already had, on the same side, a pneumonia, which required twenty days to be resolved. He assured the physician that he had never had any other serious illness, and that he had never had rheumatism, nor syphilis, nor any kind of fever. As to his hygienic antecedents, they were far from being satisfactory. The man was a hard drinker, and drank at least three litres of wine daily, and every morning two or three small glasses of brandy on his way to work.

The face was livid, and the red colour was varied by a slight tint of jaundice, seen better by inspection of the sclerotics. The respiration was rapid and shallow, 48 respirations per minute. There was stitch in the right side. Retention of urine had existed three days. Pulse, 110.

On examining the chest the percussion note on the left side was found to be normal. At the right, and at the apex, there was dulness extending to the infra-spinal fossa ; normal percussion in other parts of chest. The thoracic vibrations were slightly exaggerated in the points corresponding to the dulness. Auscultation revealed some sonorous rhonchus at the left side ; at right and in front deep rhonchus and crepitation. Behind, rough and harsh breathing in the supra- and infra-spinal fossæ, crepitating râle during coughing, and bronchophony. At the base, fine râles heard with inspiration and expiration.

The patient was treated with small doses of tartar emetic, with blisters to the upper part of chest, and afterwards with quinine, but died on April 28.

The autopsy, made on the 29th April, showed the apex of the right lung rather firm in consistence, and crepitating but slightly when pressed between the fingers. The surface of section had an uniformly brick-dust colouration, but at no point was any pus seen to exude ; a thin slice of the lung at this level slowly sank in water. The base of the right lung and the whole of the left lung were found a little congested.

This is a well-marked instance of the first stage of alcoholic phthisis. It is very rare that patients die at this epoch, and hence the value of the autopsy.

ELIMINATION OF ALCOHOL.

Experiments related in the *Practitioner* were made by the late Dr. Anstie and Dr. Dupré, with the view of ascertaining as nearly as practicable whether alcohol to any appreciable extent escapes unchanged from the body of an animal which has ingested it. The animals chosen for experiment were dogs, which approach most nearly to man in their capacity for resisting the effects of alcohol. The experiments were performed by the aid of a Pettenkofer's chamber, in which the animal was confined, while a current of air passing through the box was condensed in water. By this means *all* its excretions could be obtained and analysed.

The result of a series of these most carefully conducted experiments, including one where the entire animal was subjected to a sort of "destructive distillation," proves conclusively that within certain limits alcohol ingested by an animal becomes totally metamorphosed within the system, the percentage eliminated as such being almost inappreciable. Dr. Anstie concludes that quite 600 grains of absolute alcohol can be disposed of daily within the organism of an adult male without any perceptible injurious effect upon the bodily functions.

If alcohol be a force-producing food, it is probably of great value in that capacity, on account of the rapidity with which its transformations take place.

It is certain, however, that beyond a certain dosage, varying for the individual, it becomes a violent narcotic poison, the more dangerous that it cannot be eliminated to any considerable extent.

If alcohol does not disappear by oxidation, it must undergo some as yet quite unknown transformation, after which it must escape unrecognised in the excretions.

If alcohol, however, be indeed oxidised, and yet does not beget force which can be used in the system, this would be the strangest possible discovery. Considering the very high theoretical force-value of the 600 to 800 grains of absolute alcohol which millions of sober persons are taking every day, we may well be hopeless of any reasonable answer to the question—Why does not this large development of wholly useless force within the body produce some violent symptoms of disturbance ?

M. WURTZ ON THE ATOMIC THEORY.

At the Congress held recently at Lille, M. Wurtz, of the Institute of France, observed that science is now a neutral ground, a common property, placed in a serene region, above the political arena, inaccessible to the struggles of parties and peoples ; in a word, this property is the patrimony of the race. It is also the principal conquest of this century—the century of science.

Modern generations, indeed, are looking at a magnificent spectacle. For the last hundred years the human mind has been directing an immense effort towards the research of the phenomena and laws of the physical world ; hence an extraordinary development of all the sciences, founded on observation and on experiment. The new ideas which have arisen in our day upon the correlation and conservation of forces have been, as it were, a revelation for some of these sciences. Mechanics, physics, chemistry, and physiology itself have found therein assistance and a point of union. Science is a struggle against the unknown.

Chemistry has not only been enlarged, but has become young again, since the days of Lavoisier.

You know the work of this immortal master. His labours on combustion have given an immovable base to our science, by fixing at once the notion of simple bodies and the essential character of chemical combinations. In these last we find in weight all that was ponderable in the elements. The latter, when uniting to form composite bodies, lose none of their own substance; they lose only an imponderable substance, the heat disengaged at the moment of combustion. Hence the conception of Lavoisier, that a simple body like oxygen is constituted, properly speaking, by the intimate union of the ponderable matter, oxygen, with the imponderable fluid which constitutes the principle of heat, and which he called caloric, a profound conception adopted by modern science in a different form.

The theory of atoms was held by the Greeks, but was in modern days due to an English thinker, Dalton, who was teacher of chemistry in Manchester at the commencement of the century. This was less a pure speculation of the mind, like the ideas of the ancient atomists, and of the philosophers of the Cartesian school, than a theoretic representation of facts well ascertained, namely, the fixity of proportion according to which bodies combine, and the simplicity or relations which express the multiple combinations between two bodies.

Dalton had indeed found, that in cases where two substances combine in several proportions, the quantity of the one of them remaining constant, the quantities of the other vary according to very simple proportions. The discovery of this fact was the commencement of the atomic theory. Matter is not infinitely divisible, but is composed of a world of invisible particles which are not to be grasped, but which, nevertheless, possess a real extension and points of application for the physical and chemical forces. They are not all like each other, and the diversity of matter is bound up with the inherent differences in their nature. Perfectly identical in the same simple body, they differ from one element to another by relative weight, and perhaps by form. Affinity places them in motion, and when two bodies combine, the atoms of the one are drawn towards those of the other. As this approach takes place always in the same manner between a determinate number of atoms, which come together one by one, or one and two, or one and three, or, in other words, in very simple ratios, which are invariable in each given combination, there results from this that the smallest particles of the combination present a fixed composition rigorously alike that of the whole mass.

We know that the innumerable bodies which Nature has spread abroad in the organs of plants and animals contain a small number of elements, carbon, hydrogen, and oxygen, and often nitrogen. It is not, then, by their general composition that these differ; it is by the number and the arrangement of the atoms which enter into their composition. By more or less accumulating and grouping diversely, these atoms engender an immense multitude of distinct compounds, which are true chemical species. But what is the structure of these organic molecules, so alike in the nature of their elements, so wonderful by the infinite diversity of their properties? Berzelius had decided this question without hesitation. Assimilating organic compounds to bodies of mineral chemistry, he made with the atoms of the one, as of the other, two lots, grouping on the one side the carbon and the hydrogen, as electro-positive, and on the other, oxygen, electro-negative. And when, later, chlorine had been artificially added to organic compounds, the atoms of this powerful element were arranged by the side of oxygen, both of them being invariably engaged, in the binary combinations of which they formed the electro-negative element, whilst the atoms of carbon and hydrogen constituted the electro-negative radicals.

Forty years ago there were two young men, Dumas and Liebig, in the opposite camp, who began to study with ardour organic bodies.

From the researches they made at that time the action of chlorine on organic compounds became better understood. This body removes hydrogen from these bodies, and may substitute itself for this element, atom by atom, without disturbing the molecular equilibrium, or modifying the fundamental properties of the compound. Whilst forming a more or less complex whole, the molecules of organic substances may become modified by substitution, and give birth to a multitude of derivatives which naturally are related to the mother substance, which they resemble. That serves as the model or type. The typical idea thus was introduced into science and increased in value.

Laurent first of all said that a certain number of mineral compounds and organic compounds possessed the constitution of water, and this idea, brilliantly carried out by Williamson, has been generalised by Gerhardt, according to whom, all mineral and organic compounds may be referred to a small number of types, of which hydrochloric acid, water, and ammonia are the principal. In these relatively simple compounds one element may be replaced by another element, so that this replacement engenders a multitude of different compounds bound together by the analogy of their structures as well as by the concordance of their properties.

This last point was new and important. Bodies belonging to one type, and alike in their molecular structure may differ much in their properties: the latter depend not only on the arrangement of the atoms, but also on their nature. Thus mineral and organic bodies ranged in the type of water are, according to the nature of their elements, or of their radicals, powerful bases, energetic acids, or indifferent substances, a just and clear idea, which has established a tie between the most different bodies, and overthrown for ever the barriers which custom had raised, and which the weakness of theory had maintained between mineral and organic chemistry. And yet this was only a stage in the march of ideas. By what right or privilege, it has been asked, can the relatively simple compounds which we have just named be made to serve as types for all the others? and why should Nature be confined to fashion all bodies after the manner of water, hydrochloric acid, or ammonia.

These typical compounds represent at bottom different forms of combination, the diversity of which it is necessary to refer to the nature of the elements themselves. These last impress on each of their typical compounds a peculiar character and special form. The atoms of chlorine are so made that they require but one atom to combine with one of hydrogen to form hydrochloric acid, whilst one atom of oxygen takes two atoms of hydrogen to form water, and whilst one atom of nitrogen requires three to form ammonia, or one atom of carbon requires four of hydrogen to form marsh gas. What a difference in the power of combination of these elements and, in some sort, in their appetites for hydrogen. And shall not this difference be bound up with some peculiarity in their essence, in some property inherent in matter itself, and which would imprint on each of these hydrogen compounds a special form? It is so.

It is now admitted that the atoms are not motionless, even in bodies apparently fixed and in ready-formed combinations. At the moment when these are formed the atoms rush together. In this struggle we commonly remark a disengagement of heat, result of the expenditure of force which the atoms have lost in the fight, and the intensity of this calorific phenomenon gives the measure of the energy of the affinities which have presided over the combination. But there is something in the chemical phenomena besides the intensity of the forces which are engaged, and which are exhausted more or less by the disengaged heat; there is their fashion. The atoms of different simple bodies are not gifted with the same aptitudes for combination; they are not equivalent to each other. This has been called the atomicity, and this fundamental property of atoms is doubtless connected with the different kinds of movement with which they are animated. When these atoms combine with each other their motions have need to be co-ordinated reciprocally, and this co-ordination determines the form of the new systems of equilibrium which will arise, that is, the new combinations.

In chemistry, at least, quackery has had its day: the problems clearly put, require to be confronted, and henceforward reasoned experiment will leave less and less room for chance discoveries or surprises made in the crucible. Away, then, those who would detract from the value of theory, and who go in quest of discoveries which they know neither how to perceive nor to prepare; they gather where they have not sown.

DR. BURNS, OF CHATTANOOGA, ON HYPODERMIC INJECTION.

Dr. Burns (*Nashville Journal*, August, 1874) says that in the wards for nerve wounds in the United States Army Hospital, during one year at least 40,000 doses of various narcotics were administered without an accident, and in certain single cases upwards of 500 hypodermic injections were used, so that if there were no other evidence of the innocence of this mode of medication, that experience would have been amply competent to settle the question. The difficulty of introducing the needle without giving pain is by no means trifling where the arm is well rounded and the skin tight and delicate; but an irritable stomach gives the patient far greater distress, and not unfrequently renders the administration of medicine by the mouth impracticable.

The advantages of hypodermic injections are that they furnish a reliable means of introducing certain drugs into the system, when they could either be introduced in no other way, or, if introduced, would not be retained; for example, morphine in peritonitis and in aconite-poisoning. When a patient is purging and vomiting from an overdose of aconite there are but two methods to choose between—morphine absorbed from a blistered surface, and morphine by hypodermic injection. The first might involve so considerable an extent of surface as to prove an extremely unpleasant if not serious sequel; whereas morphine, by hypodermic injection, is not only prompt enough for any serious emergency, but is satisfactory in its results, and free from objectionable consequences.

Peritonitis is sufficiently distressing to bear or to witness to make welcome any means of alleviating the double suffering of pain and nausea, when the stomach no longer tolerates morphine, and that crisis nearly always occurs in severe or protracted cases. Hypodermic injections fulfil the indication like a charm.

Some drugs, as arsenic, which by prolonged use cause gastric and other disturbances, may be administered by hypodermic injection with impunity.

Some cases, which require a more speedy action of drugs than could be obtained from them when given by the mouth, are readily managed by hypodermic injection; for instance, cases of internal hæmorrhage, and profuse discharge from the bowels, the former yielding to ergotine, the latter to morphine.

An effect different in kind is produced, as that of morphine in neuralgia.

Dr. Hildebrandt, of Berlin, speaks of hypodermic injection of ergotine in fibrous tumour of the uterus, and thinks this a powerful agent. In one case a tumour which had extended beyond the umbilicus disappeared; in a second, a tumour which reached as far as the false ribs descended to below the umbilicus; and in four cases where the treatment had been less complete, there was improvement.

Ergotine renders menstruation less irregular, less abundant, less prolonged, and, above all, less painful. Dr. Drasche believes that ergotine must be regarded as the best of all hæmostatic agents for hypodermic use. He has employed it in tubercular hæmoptysis in doses of from half a grain to one and a half grains, and in most of these cases the hæmostatic effect was very prompt. In two cases of epistaxis its effect was speedy, and the dose required very small. The best vehicle is glycerine, five grains to one drachm, and injection is best made in the pectoral region.

TOPICS OF THE TIME.

ON EXCISION OF CANCER OF THE BREAST BY SCISSOR-CUTTING UNDER ETHER SPRAY.

Dr. Benjamin W. Richardson, F.R.S., publishes in the *Lancet*, Aug. 29, an important paper on this subject, from which we find he has himself performed operations with scissors. If this be contrary to the custom of the College of Physicians of which Dr. Richardson is a member, we none the less rejoice that he has refused to be thus trammeled, and we invite special attention to this, his last contribution to our art. He relates two cases. The first is as follows:—

On the 8th May last, the first patient having been placed in a semi-recumbent position on a narrow couch, I directed Mr. W. Perkins who very efficiently conducted the local anæsthesia, to direct gently over the tumour a large spray of common ether, so as to chill thoroughly but not to freeze the skin. I let him maintain this for a period of five minutes. Then I handed him another tube and bottle for spraying over the already chilled part the light fluid called anæsthetic ether—a compound of ether of sp. gr. ·720 with hydride of amyl. A few moments' application of this lighter ether was sufficient to render the breast frozen like a hard snowball. For a minute longer, that the deeper structures might become equally chilled, the spray was continued. When the structures were thus prepared, instead of using a scalpel for cutting, as in the ordinary way, I made the required incisions through the skin with a pair of small, strong, sharp, slightly curved scissors. Commencing the incision by an angular cut at the outer margin of the part to be excised, I carried the lower blade of the scissors deeply into the breast with the edge of the blade everted. In this way I cut the lower flap; then, commencing at the same angle, I cut in the same manner the upper flap. The rapidity and ease with which these incisions through the hardened tissues were made struck me most favourably. The incisions were deep enough to enable me to grasp the tumour firmly with the left hand. I now laid down the ordinary sharp cutting scissors, and with a pair of strong, slightly curved, tooth-edged scissors, I proceeded to cut on each side of the tumour until I could fairly lift it up; then by a few strokes made with the same scissors underneath, I cleared it completely away. The operation lasted precisely three minutes, and was unattended, during the whole time, by the escape of blood. The diseased mass removed, I had the ether spray withdrawn, in order to see if any vessels would bleed during reaction from the freezing. There was a little oozing of blood, which quickly subsided, and one artery was tied, both ends of the ligature being cut off close to the vessel. The wound, carefully cleaned with a soft, damp sponge, was closed; the edges of it were secured with five sutures; a pledget of cotton-wool, charged with styptic colloid, was placed over the wound; and a lint pad and firm bandage completed the dressing. The patient passed a good night after the operation. She was allowed to rise and go into the drawing-room on the following day; and as she exibited no rise of temperature beyond 99° Fahr., and that only for a few hours, and suffered from not one untoward symptom, the dressing was left untouched until the 13th of May, when, on removing it, the wound was found healed throughout its entire extent. The sutures were removed a few days later, when the line of incision was found fairly closed, without a particle of discharge or interruption of healing at any point.

During the whole of the operation the patient did not utter a single expression of pain, and I may here add her own description of what she felt of the operation. The description was taken down by Dr. Platt, who rendered me his most able assistance, from the patient, immediately after the operation, and it is repeated in her own words:—"During the application of the ether spray the local feeling was that of gradually becoming cold, as in frosty weather, just as when the hands go numbed, but there was no actual pain. Felt pressure when the scissors went into the tumour, ahd experienced a kind of jar, but did not feel anything like an incision, and, in fact was not aware when the incisions were made. Felt nothing of the next part of the operation, but when the tumour was held up and divided by three long cuts, experienced a feeling, not of pain, but as if the parts were put on the stretch, or dragged; did not feel the tying of the ligature, but when some small substance [a bit of loose fatty tissue] was cut off felt again as if the parts were being stretched. When the sutures were introduced felt the pressure whilst the flaps were being held together, but was unconcious of the prick of the needle."

In all respects this operation was, as an operation, completely successful, and one other success followed it I did not expect. As the recovery from the excision progressed the irregular action of the heart became less marked, and ultimately disappeared altogether. In the month of July this lady called upon me, and was found to be restored to perfect health.

The second patient, like the first, bore the operation perfectly, She felt no pain from the incisions; and although the deep dissection which was required to remove the tumour from its attachment was felt as a severe drag or pull, it gave rise to no evidence of acute pain. The act of sponging the wound, and the insertion of one of the sutures, caused momentary expression of pain, but, on the whole, she was throughout brave, perfectly collected, and as quiet as if she had been asleep. This patient, like the previous one, progressed so favourably that she was allowed to get up every day. On the fourth day after the operation, as she complained of the pressure of the pad, I removed the dressing, and found the wound freshly healed throughout its entire length, without a trace of suppuration. In this act, however, a little misfortune occurred. A portion of the cotton-wool adhered firmly, through the styptic colloid, to a loose end of the upper suture, and, while I was extricating the wool, an accidental movement of the patient caused the ligature to tear out of the upper lip of the newly-joined skin. From this slight point there flowed as much as a drachm and a half to two drachms of bright-red very thin blood. I stopped this bleeding, not very readily, by firm pressure with styptic wool; but a little further bleeding took plaee during the day beneath the compress and into the subcutaneous tissue, and gave rise to a superficial sore about the size of a sixpence. On the eighth day after the operation the patient was able to go out of door, and, but for the slow healing of the small sore whence the hæmorrhage proceeded at the first dressing of the wound, recovery rapidly succeeded.

One other fact closely connecting this with the preceding case is worthy of particular notice. As this second patient began to rally from the operation, the distressing cardiac symptoms entirely passed away, the stroke of the heart improved in tone, the irritability ceased, and the faint murmur became imperceptible.

Dr. Richardson, in some comments on the cases related, observes:—

The effect of the local anæsthesia.—It is certain that in both these cases the local method afforded everything that could be desired in the way of anæsthesia. It saved all acute pain; it saved the patient the dread of death during the insensibility from a general anæsthetic, and it enabled me to proceed in our task without a thought as to the immediate safety of the patient. It warranted me in recommending the operation.

The method of cutting with scissors.—Local anæsthesia has many disadvantages. It is more troublesome than general anæsthesia as a detail of practice, and, as it leaves the consciousness alive, it fails at times in preventing the fears of the patient. But hitherto the greatest difficulty in operating under it has been the obstacle of cutting through the hard, frozen, insensible part. The resistance to incision by the best cutting knife, and especially to dissection by the knife, is such that I have seen the most skilful surgeons troubled by it; and I have never been able to complain of the objection that had been made to the method on this ground. The difficulty is now overcome by the process of scissor-cutting, which I have here introduced. The advantage of the scissors over the scalpel will be at once proved by any one who will take a thick, firm structure—the cover of a book for example — and try to cut through it. With the best of scalpels he will be troubled; but with scissor blades he will cut with the utmost facility, if the blades be well set. So, in cutting through the frozen animal tissue, the parts can be divided as rapidly as may be wished with the scissor-blades, with perfect accuracy of incision, and as deeply as may be desired. The cutting is also made without any downward pressure, by which pain of pressure is saved. Also in deep dissection the tissues, frozen as they are exposed, can be divided more easily than by the knife; for the harder they are solidified, the easier they are divided by the scissor-blades. In a word, I believe that every cutting operation, in which local anæsthesia is practicable, may be performed neatly and effectively by scissor-cutting, and that a much larger number of operations may now be painlessly carried out under the local method.

Effect of the operation on the heart in the cases related.—No fact is more instructive in the history of the patients recorded in this paper than the beneficial effect produced on the functions of the heart by the operation. In both instances the cardiac irregularity and irritability were purely due to irregular nervous supply—to nervous irritation and consequent muscular exhaustion. The irritation might have been in part due to the mental anxiety which naturally accompanies the disease, or it might have been due to the irritation of the tumour, and have been reflex in character. Whichever view be correct, the result of the operation was curative, and, as the cases are typical of a class of phenomena of disease, the lesson they teach is extended far beyond them as individual illustrations. They show that so soon as the heart obtains rest from the persistent nervous thrill that invades it, its muscular tone returns, and its irregular motion and excitability cease. Thus, by operating early for the removal of cancer the surgeon acts as physician also, and prolongs the general life by removing the local disease. I am convinced I have seen patients suffering of cancer die from the mental and local irritation of the disease long before any development of the malady has advanced to kill by destruction of the part or organ involved.

LOCAL TUBERCULOSIS.

Some valuable recent observations have been made on this subject. In the first place, Dr. Carl Friedlaender, of Strasbourg, published a valuable paper, which has been translated and condensed by Dr. Von Petershausen for the *Detroit Review*. We avail ourselves of this to furnish an epitome of Dr. F.'s views :—

"Our present views of tuberculosis are based principally upon Virchow's investigations. He first pointed out that *cheesy degeneration is not* a specific attribute of the *tuberculous* process, but that it is a sequence of several morbid growths, such as cancer, sarcoma, &c., or even of inflammatory processes. He further investigated the true character of the lobular hepatisation, and the cheesy peribronchitis of the lungs, formerly so often confounded with tuberculosis, and he maintained that the *miliary eruptions of the serous membranes* constituted the typical form of tubercle. Virchow's definition of tubercle is in general, even at the present time, correct. He declares the tubercle to be a morbid growth, appearing in *little knots*, originated always from the *connective tissue*, and consisting of little *globular cells*, lying close together. The life of these growths is limited; degeneration soon sets in, beginning in the centre of the knot, and resulting generally in a *cheesy mass*. Aside from the local malignity, the tendency of tubercles to occupy the entire organism places them under the class of malignant growths.

"These statements form the basis of our knowledge of tuberculosis. Facts which became known after Virchow's investigations extend and modify, but do not overthrow them.

"Langhans first observed the *constant* presence of *giant cells* in the tubercle. It is true that Virchow had already observed such, but Langhans found their presence typical of tubercle. Besides, he pointed out the peculiar nature of the tubercular giant cells. He found that they were situated in the *periphery* of the tubercle, that their size is *uniform*, and that their nuclei were arranged in the *radii* of the cells. Though the form of the giant cells is in general globular, considerable irregularities may be observed.

"Tubercles were found after Langhans' discovery, by Köster, in a place hitherto unobserved, *i.e.*, in the granulations of the fungous inflammation of the joints. Tubercles are always present in this disease, as it seems. They consist of larger epitheloid cells, containing nuclei and much protoplasm.

"The same formations were found by Schüppel in cheesy, lymphatic glands, or in lymphatic glands appearing simply hyperplastic. The discoveries of Köster and Schüppel showed that true scrofulous diseases must be classed under tuberculosis.

"I can add, after my own observations, that in scrofulous diseases of skin and bone, in scrofulous ulcers and abscesses of the skin, as well as in caries, there is regularly to be found an abundant eruption of tuberculous knots. All scrofulous diseases are, according to this, accompanied by the development of tubercles.

"Aside from the light thrown by these investigations upon the question about the relation of scrofulosis and tuberculosis, we are led by the late discoveries to a new territory, local tuberculosis. In many instances the scrofulous-tubercular diseases appear as primary affections, and do not affect other organs, while in others they may result from a tuberculosis of other organs.

"It is well known that lupus generally attacks persons in good health, and that this disease seldom leads to an infection of other organs, besides lymphatic glands. And yet lupus consists principally of *confluent little tubercles*, with giant cells and epitheloid elements. The cellular nature of the giant cells is put beyond doubt by their amœboid motions, which may be observed when they are isolated and brought into serum.

"A few cases of local tuberculosis will be as interesting as illustrative: A woman of about forty years died suddenly from apoplexy. No traces of tubercles could be found in the inner organs, except in the base of an ulcer around the external os. Another case was that of a healthy woman, whose ear-flaps contained an ulcer, consisting entirely of tubercles. In a third case, tubercles were found in the deeper layers of an ulcer, extirpated from the cheek of a woman otherwise healthy. Then the same formation occurred in an epitheloid cyst of the breast, in a place where superficial decomposition was noticed. At last, in the stroma of a cancer, that originated in the scar of an excised ulcer, tubercles were found.

"The related cases were not connected with general tuberculosis; and, pronouncing the local affection as tuberculosis, we *change* and *enlarge* our general conception of tuberculosis. That the formations in question are really tubercles is proved by the *anatomical identity* of their local nodules with those in general tuberculosis. As long as the *anatomical character* of a morbid growth forms the leading principle for classification, we have to recognise these nodules as tubercles.

"It was Prof. von Recklinghausen who called my attention to the fact that *typical* examples for local tuberculosis may be found in the brain. The well known large tubercles of the brain are, in spite of their relatively long life, either solitary, or, if multiple, only to be observed in the brain.

"By all recent researches we now learn that the *presence* of tubercles in certain parts of the body is *not sufficient* to pronounce *general* tuberculosis, as formerly was believed. Experiments made in the surgical clinic in Halle first tended to alter the former view. Cases of fungous, tuberculous inflammations of the joints recovered after resection. The true tuberculous character of this disease was proved by microscopical examination of the synovial membrane. In some cases, where fistulæ remained, it could be proved that the local tuberculosis was stable for years, while the patients in general enjoyed good health. Of course, cases will be met with where this local affection is combined with general tuberculosis, but it is interesting that this connection often is wanting, even in cases where local tuberculosis was observed for years. These facts are the more important, as they demonstrate the *relative harmlessness* of local tuberculosis. In general tuberculosis there must be after this another principle, whose infectious properties cause the morbid growth.

"Though local tubercular processes have no general malign character, they are of considerable local malignity. Spontaneous healing of lupus is rare, and will be observed only after extensive destructions. In scrofulous abscesses and ulcers of the skin, it is not, as in lupus, the cutis, but the deeper layers of the skin, which become destroyed. To promote their healing, the tubercular nodules must be removed, also the undermined skin; then healthy granulating tissue will form, and from this a scar. The process in tuberculous inflammation of the joints is analogous to this, and likewise that in local tuberculosis of the lymphatic glands and in the testicle, save in the latter cases, large, cheesy masses are formed. The cheesy degeneration in these cases is similar to that of tubercles in the spleen, liver, lungs, brain, &c., and begins either in the centre of an aggregation of tuberculous nodules, or appears in a larger part of an organ, in which tubercles are interspersed. In this case, the outlines of former tubercles are often recognised, and, sometimes, even the giant cells in them.

"Of especial interest are the conditions in the lungs. While in a certain number of cases the phthisis of lungs is of a purely inflammatory nature (sub-acute and chronic, cheesy pneumonia) there are others of a mixed nature, *i.e.*, there may be observed inflammation as well as tuberculosis in them. These cases surpass the others in number. Microscopic examinations often reveal in phthisic lungs a more or less numerous eruption of tubercles. These are a millimetre in diameter, and are grouped in crowds, especially in the connective tissue around the bronchiæ; besides, they have a tendency for cheesy degeneration. In large numbers, they cause the shrinking of the lung substance; for the tissue between and around the tubercles generally participates in the cheesy destruction. These tuberculous phthises of lungs are completely localised, *i.e.*, no other organ is attacked from tuberculosis; and only in consequence of their extensive destruction in the lungs they cause death. Besides, in other cases, we have tuberculosis of the pleura, or general tuberculosis. When the process remains local, healing may take place, which, of course, is always combined with loss of substance. This, as well as the tendency for local relapses, speaks for the local malignity of localised tuberculosis. The tendency for degeneration could be explained by the *want* of vessels in the nodules. But there may be, also, other causes acting in this respect.

"While we must alter Virchow's view of tuberculosis a little, at the same time we have to correct the views of investigators, who, like Wilson Fox, have tried of late to overthrow the whole of Virchow's teachings. Fox, not considering the late German investigations on histology of the tubercle, calls the tubercle a "lymphatical growth," and communicates, then, the not very recent observation that, in tuberculous affections of the lung, there is, besides the tubercular nodules, a diffuse infiltration of the interstitial tissues with masses of lymphatic cells, which infiltration may also lead to cheesy degeneration. Instead of explaining these cases to be a *combination* of chronic, cheesy pneumonia with tuberculosis, he declares the diffuse, cheesy infiltrations are tuberculous processes, and considers the nodulous appearance as a mere accessory element, useless in defining tubercle. Respecting this, we remark that we lose everything, if we give up the nodular form of the tubercle. Moreover, since Virchow's investigations, it is a well known fact that there are inflammations which may terminate in cheesy products. It is, therefore, astonishing, that we must hear how a diffuse increase of little cells, which terminates in cheesy destruction is considered, without ceremony, as tuberculous. Seeming diffuse infiltrations are always the result of the confluence of tuberculous nodules, as a thorough examination with the microscope, in most cases, will prove. Only, if the confluence has become a complete one, the reference will be difficult, as degenerative processes have made much progress under this circumstance.

"With respect to ætiology we must consider three conjectures:—1. Tuberculosis and inflammation are co-effects of the same cause. 2. Tuberculosis causes a secondary inflammation. 3. Tuberculosis is caused by inflammation.

"Without further examination, we might be inclined to subscribe to the third sentence. The local inflammations could call forth by their products the formation of tubercles. We find, now, in recent forms of the disease, the greatest number of tubercles, while in forms of longer standing, where ulceration took place, tubercles are difficult to find. If, really, tubercles were a secondary product, the number of tubercles *must grow* with the duration of the affection.

"The theory of tubercular infection is based upon Buhl's statement that in nearly all cases of general tuberculosis there is found a cheesy degeneration. He concluded from this that the cheesy mass is the generator of tubercles. Against this view we remark that we meet cases of tuberculosis in which *no cheesy* masses can be found. Besides, cases of local tuberculosis may predispose, after their relative healing, to general tuberculosis. Moreover, the experiments of Villemin, who inoculated tuberculous masses in rabbits, did not produce *true tuberculosis.* I, as well as Dr. Weigert, could prove this by experiments, The so-called tuberculosis of inoculation does not have the *typical* form of true tubercles, with their characteristical giant cells. Besides, it could be proved that the nodules in the lungs of the inoculated animals were in reality *lobular pneumoniæ*. This lung affection is no more a true tuberculosis than the pseudo-tuberculosis caused by Cruveilhier and Lombard by injection of mercury into the bronchiæ, or caused by Panum, by embolism of small branches of lung arteries. All these artifacts are *miliary pneumoniæ*, but not tuberculoses. We are, therefore, not able to produce, experimentally, by inoculation, a disease identical with human tuberculosis.

"After this, we must admit that the chronic inflammation and ulceration is *not the cause* of tuberculous processes. At the same time, we must confess, we know about as little of the ætiology of tuberculosis as of cancer.

"In regard to treatment, we must be led by the following principles: Tubercles must be dissected, in places where this may be done without danger, as only then complete healing may result. But no other than urgent circumstances must induce us to operate, as local tuberculosis does not necessarily result in general infection."

Dr. F.'s views are combated to some extent by Professor Köster, of Giessen, in the *Centralbl.* His paper is thus given in the *New York Medical Journal*:—

"Miliary tubercles were found in the fungous granulations of joints, in the fungous growths of bone, in the tendinous sheaths and mucous bursæ. Tubercles also exist in fungous caries, fungous ostitis, and osteo-myelitis (without inflammation of the joint); furthermore in cheesy ostitis and scrofulous osteo-myelitis and in the granulating tissue of ordinary caries. In inflamed granulating connective tissue of so-called tuberculous inflammations accompanied by progressive cheesy degeneration of the renal pelves (phthisis renalis), of the ureters and urinary bladder, of the tubes and uterus, of the vesiculæ seminales, epididymes and testicles, in all of which structures tuberculosis can take primary origin, the author has always found miliary tubercle in the inflamed granulating connective tissue. Tubercles were also found disseminated throughout a so-called benign granuloma of the conjunctiva. In chronic inflammations of the pleuræ and pericardium, less often of the peritoneum, which are covered with an inspissated cheesy exudation, the tubercles are found in the superficial granulations under the cheesy covering instead of in the deeper substance of the false membrane. Tubercles also exist in the base and margins of phthisical laryngeal ulcers. Köster also found them in hyperæmic tissue in the vicinity of perichondritis laryngea arising from various causes. Miliary tubercles were also found in great abundance in a syphilitic chancre of the nose and in one of the penis; furthermore, in numerous probably syphilitic ulcerations of the intestine; in a recent case of elephantiasis of the labium; in abscess of the breast; in a granuloma of the iris which had burst through the cornea; in an ulcer of the tongue, &c. Occasionally the whole mass of granulations consisted mainly of tubercles with a small amount of connective tissue. In inflamed, cheesy, lymphatic glands (scrofula), numerous miliary tubercles are almost always present. The course of the majority of pulmonary phthises is that of local tuberculous processes; these originate in lobular, infundibular, or final bronchial chronic inflammations with central caseous degeneration and inflammatory fungous granulations of the surrounding connective tissue, and their extension is eccentric. The tubercles make their appearance in the granular connective tissue. Pulmonary phthises, which develope out of cheesy pneumonias without connective tissue proliferation, do not contain tubercles if the following ulceration is accompanied by connective-tissue proliferation. In all these above cases, tubercles do not appear in healthy tissue, but always in inflammatory proliferated or newly-formed connective and granulating tissue, and the latter is the foundation for the eruption of miliary tuberculosis. By this assertion Köster opposes Friedlander, who maintains that tubercles primarily originate in healthy tissue. In regard to the microscopic structure of tubercles, the author's description corresponds in the main with that of E. Wagner. They consist of one or more giant cells with larger and smaller cells, and reticulum; the latter will not of course be perceptible always, but is not entirely absent, as Friedlander asserts. The composition of tubercles depends essentially on the condition and proliferation of the connective tissue."—(*Prager Vierteljahrschr.*, 1874, 2.)

INVERTING THE BODY IN CHLOROFORM NARCOSIS.

This plan, which is known as "Nélaton's method," was the subject of two communications in the Surgical Section at the Norwich meeting.

Dr. Marion Sims related a case in which Nélaton was present, when, in the midst of Dr. Sims' operation, the chloroformist, Dr. Campbell, said, "Stop! stop! No pulse, no breathing!" and, looking to M. Nélaton, he said, "Tête en bas, n'est-ce pas?" Nélaton replied, "Certainly; there is nothing else to do." Immediately the body was inverted, the head hanging down, while the heels were raised high in the air by Dr. Johnston, the legs resting, one on each of his shoulders. Dr. Campbell supported the thorax. Mr. Herbert was sent to an adjoining room for a spoon, with the handle of which the jaws were held open, and I handed M. Nélaton a tenaculum, which he hooked into the tongue, and gave in charge to Mr. Herbert; while to Dr. Beylard was assigned the duty of making efforts at artificial respiration, by pressure alternately on the thorax and abdomen. M. Nélaton ordered and overlooked every movement, while I stood aloof and watched the proceedings with, of course, the most intense anxiety. They held the patient in this inverted position for a long time before there was any manifestation of returning life. Dr. Campbell, in his report, says it was fifteen minutes, and that it seemed an age. My notes of the case, written a few hours afterwards, make it twenty minutes. Be this as it may, the time was so long that I thought it useless to make any further efforts, and I said, "Gentlemen, she is certainly dead, and you might as well let her alone." But the great and good Nélaton never lost hope, and by his quiet, cool, brave manner he seemed to infuse his spirit into his aids. At last there was a feeble inspiration, and after a long time another, and by-and-by another; and then the breathing became pretty regular, and Dr. Campbell said, "The pulse returns, thank God; she will soon be all right again." Dr. Beylard, who always sees the cheerful side of everything in life, was disposed to laugh at the fear I manifested for the safety of our patient. I must confess that never before or since have I felt such a grave responsibility. When the pulse and respiration were well re-established, M. Nélaton ordered the patient to be laid on the table. This was done gently. But what was our horror, when, at the moment the body was placed horizontally, the pulse and breathing instantly ceased. Quick as thought, the body was again inverted, the head downwards and the feet over Dr. Johnston's shoulders, and the same manœuvres as before were put in execution. Dr. Campbell thinks it did not take such a long time to re-establish the action of the lungs and heart as in the first instance. It may have lacked a few seconds of the time; but it seemed to me to be quite as long. For the same tedious, painful, protracted, and anxious efforts were made as before, and she seemed, if possible, more dead than before; but, thanks to the brave men who had her in charge, feeble signs of returning life eventually made their appearance. Respiration was at first irregular, and at long intervals; soon it became more regular, and the pulse could then be counted; but it was very feeble, and would intermit. I began again to be hopeful, and even dared to think that at last there was an end of this dreadful suspense, when they laid her horizontally on the table again, saying, "She is all right this time." To witness two such painful scenes of danger to a young and valuable life, and to experience such agony of anxiety, produced a tension of heart and mind and soul that cannot be imagined. What, then, must have been our dismay, our feeling of despair when, incredible as it may seem, the moment the body was laid in the horizontal position again, the respiration ceased a third time, the pulse was gone, and she looked the perfect picture of death! Then I gave up all as lost, for I thought that the blood was so poisoned, so charged with chloroform, that it was no longer able to sustain life. But Nélaton, and Campbell, and Johnston, and Beylard, and Herbert, by a consentaneous effort, quickly inverted the body a third time, thus throwing all the blood possible to the brain, and again they began their efforts at artificial respiration. It seemed to me that she would never breathe again; but at last there was a spasmodic gasp, and, after a long while, there was another effort at inspiration, and, after another long interval, there was a third; they were "far between"; then we watched, and waited, and wondered if there would ever be a fourth; at length it came, and more profoundly, and there was a long yawn, and the respiration became tolerably regular. Soon Dr. Beylard says, "I feel the pulse again, but it is very weak." Nélaton, after some moments, ejaculates, "The colour of the tongue and lips is more natural." Campbell says, "The vomiting is favourable: see, she moves her hands; she is pushing against me." But I was by no means sure that these movements were not merely signs of the last death-struggle, and so I expressed myself. Presently Dr. Johnston said, "See here, doctor; see how she kicks; she is coming round again;" and very soon they all said, "She is safe at last." I replied, "For heaven's sake, keep her safe; I beg you not to put her on the table again till she is conscious." This was the first and only suggestion I made during all these anxious moments, and it was acted upon, for she was held in the vertical position till she, in a manner, recovered semi-consciousness, opened her eyes, looked wildly around, and asked what was the matter. She was then, and not till then, laid on the table, and all present felt quite as solemn and as thankful as I did; and we all in turn grasped Nélaton's hand, and thanked him for having saved the life of this lovely woman.

Dr. Sims mentioned another case in which the method was equally successful. He also said that ten years ago there was a story prevalent in Paris that M. Nélaton had derived the hint of reversing the body in chloroform-poisoning from a discovery accidentally made by his little son, then seven or eight years old; that the little boy had killed some mice with chloroform; that, without thought or reason, he had taken up a dead mouse by the tail, and was twirling it round, when, to his surprise, it began to manifest signs of life, and recovered entirely, while the mice left lying were dead; and that the great surgeon was thus taught a great lesson, if not by babes and sucklings, at least by a little boy. This is a very pretty story as it is, and it seems a pity to spoil it. A few days ago, when in Paris, I called to see young Nélaton (who is now a student of medicine, and will graduate next year), and I asked him for the facts of the mouse story. He said that when they lived on the Quai Voltaire, the house was infested with mice; that great numbers were caught in traps almost daily; that he was in the habit of killing them with chloroform by covering the trap with a napkin and pouring the chloroform on it, and that his only idea was that of an easy death for the mice. One day, when he had given a happy despatch to some mice, his father accidentally came into the room, and, seeing the dead mice, he told his son that if he would take up one by the tail, and hold it with the head downwards, it would revive, while the others would not. He did this, and found it was true. And he told me that he had, when a boy, performed the same experiment on mice forty or fifty times or more, and always with the same unvarying result. He says that he has often heard his father speak, not only of the case that occurred at St. Germain, but of other cases that he had saved in the same way before the time of the mouse story, which dates back to 1857 or 1858.

Sir John Rose Cormack related, at the same meeting, a case in which the method had proved successful, although the patient remained for a much longer time in a precarious condition. In fact, his case was one in which the poisonous effects of the chloroform continued for a long time, as in those described by Casper and others. Sir John says:—

"I am convinced of the therapeutic value of inverting the body when there is syncope from cerebral anæmia. Dr. Herbert, Mr. Vines, and I were all at the time convinced that the inversion produced a powerful effect in restoring the contractions of the heart. I feel certain that the practice proved decidedly beneficial in our hands, and that it is a practice which ought to be resorted to in similar cases. I am, however, also convinced that all the various restorative measures which we employed contributed to bring about recovery. It is impossible to apportion the share of good which was accomplished by each of the means employed. No one can say how far the inversion of the body was the means of restoring life, seeing that artificial respiration was employed—that most wonderful agency in producing resuscitation of the apparently dead. Numerous cases are recorded in which, by means of keeping the patients warm and in the horizontal position, artificial respiration has saved them. Nevertheless, my case showed that, while artificial respiration was of signal benefit when the body was horizontal, inversion for four or five minutes—at intervals—was an useful addition to ordinary resuscitative measures. We all know the benefit of the horizontal position in cases of ordinary fainting. I am far from recommending that, in cases of chloroform-fainting, the inverted position ought to be preferred to the horizontal. I only recommend it to be used, as in the case I have described, for short periods—say for four or five minutes or less, at intervals—and in conjunction with the persevering use of artificial breathing, and the other common measures of recovery and precaution."

DISEASES OF THE TONGUE.

In the *Dental Cosmos* Professor Harrison Allen makes some interesting remarks on diseases of the tongue. He divides the localisation of diseased action into four portions—(a) diseases appearing on the epitheleal surface; (b) those appearing in the submucous or muscular tissues; (c) diseases of anterior two-thirds of the dorsum as contrasted with the posterior third; (d) diseases as influenced by symmetry.

The diseases limited to the epithelial covering of the tongue he considers are analogous to conditions of the epithelium of the integument, such as psoriasis, icthyosis, and keloid. The first-mentioned disease is recognised by smooth patches, which are glossy and remarkable for the absence of the fur which may coat elsewhere the entire dorsal surface. It is generally syphilitic.

Ichthyosis is a less frequent disease, and often the forerunner of cancer. It consists of a thickening of the epithelium so as to form a white skin-like layer with an uneven surface, which has been compared to a kid-glove or wet leather. It is of wide extent.

The single example of keloid is recorded by Mr. Sedgwick.

The varieties of the fur of the tongue afford valuable symptoms of systemic disease. The glossitis of scarlet fever, for instance, presents a striking appearance, the result of the contrast between the thick cream-like fur and the enlarged and reddened fungiform papillæ.

Papillary Hypertrophy.—The vallate papillæ are often enlarged in strumous subjects. Exaggerations of the filiform papillæ take on a hair-like appearance. They have been rarely recognised in old debilitated patients. True verrucæ, or warts of the tongue, are rare. Syphilitic condylomes are distinguished from other growths by presenting a pale whitish surface on a gradual and nearly level elevation.

Dry tongue, usually due to grave systemic disturbance, may have a purely mechanical origin. In a male, thirty-two years of age, a polypus in the right nasal chamber caused dryness of the tongue for a few lines on either side of the centre, extending from the tip almost to the base. The patient kept his mouth habitually open. The dryness disappeared after removal of the polypus.

Cancer.—Since it has been generally accepted that cancer of the tongue is always of the epithelial variety, we find it beginning at the epithelial covering of the tongue. Lingual cancer is acute in its character—a feature which can be explained by the "succulent structure of the tongue, and the facilities thereby offered for growth by infiltration and for rapidity of absorption." The ulceration extends through the muscles which connect the tongue with the hyoid bone and inferior maxilla, and these being largely supplied with arteries, much hæmorrhage ensues.

Fissures.—Fissure of the tongue, although generally correctly so denominated, is often covered throughout by epithelial cells, when it would appear to be simply hypertrophy of the papillæ defining the oblique lines. Especially is this the case at the sides toward the region of the vallate papillæ. When denuded at their bases, fissures are often the result of irritation from a sharp angle of a tooth, and in this condition may prove the exciting cause of cancerous deposition. Care should be taken not to confound the undenuded depression with fissure. It is recommended to stretch the tongue during examination. If the depression becomes unfolded and disappears by this manipulation, no fissure exists.

TUMOUR OF THE OPTIC NERVE.

At a recent meeting of the Pathological Society of New York, Professor Knapp exhibited a tumour of the optic nerve which he had extracted from a patient. The nerve ran directly through the tumour, which was in close contact with the sclerotic and with the eyeball.

The eyelids were held open by a wire speculum, and the incision made between the superior and inferior internal oblique recti and trochlearis muscles. The tumour was then separated from its attachments and removed from the orbit with the aid of curved scissors. No part of the optic nerve was left in the orbit, but one of the muscles was seperated, and some of the ciliary vessels were divided.

After the operation there was movement of the eye up and down, but not laterally. No suppuration occurred, and the eyeball assumed its usual prominence. Some ulceration of the cornea took place through the lids having been stitched together to afford mechanical support to the globe of the eye.

In the interior of the eye the retina was milky in appearance, and scarcely a blood-vessel visible. Three or four days after some blood-vessels appeared, and the retina cleared up.

There are only some nine parallel cases on record.

INDEPENDENT DEPARTMENT.

THE DISEASES CAUSED BY DRINKING ALCOHOL.

Being a Review of a Debate in the New York Neurological Society.

For many years past a division has crept into the ranks of the medical practitioner with regard to the question of alcoholic drinks. Owing principally to the influence of Dr. Todd, there was for a time quite a fashion of giving alcohol to every person who could in any way plead to not being in perfect health, and, as perfect health is almost an unknown quantity in civilised existence, the idea that the daily imbibition of a certain amount of some alcoholic stimulus was somehow or other necessary became a pretty general belief throughout society. Young and vigorous physicians, like the late Dr. Anstie, who had frequented the wards of Dr. Todd, and listened to his teachings, were enthusiastic as to the virtues of alcoholic liquors in various diseases, and consequently medical theories began speedily to assume a peculiarly favourable aspect towards all that tended towards so-called "generous diet," and, as a consequence of this, a tendency to frown upon abstinence from alcohol came into vogue among practitioners.

I shall gladly be told that this account of the matter is an exaggeration; but my own experience of medical practice in London of late years leads me to assert fearlessly that I am merely narrating what has appeared to me to be the opinion of many of the leading physicians and surgeons of the metropolis. And, since London practice is copied by that of most of the provincial towns of England and Ireland, I conclude that alcoholic treatment of disease has, throughout the whole of these two parts of the United Kingdom, been in vogue for some long time past.

For my part, I must confess I have never been carried away by the enthusiastic praises which have been showered upon alcohol in the treatment of disease. Having long been acquainted with the sad array of disease, acute and chronic, which are produced by the use of beer, wine, spirits, or other forms of alcoholic dilutions, I have always been persuaded that, unless when a very clear indication for using these drugs has presented itself, it is far better to withhold them and content ourselves with prescribing some article of the Pharmacopœia less liable to be abused and more certain to be efficacious.

In the United States of America there has just taken place a long discussion on the effects of alcohol on the nervous system, and the President of the New York Neurological Society, Dr. Hammond, has been arguing that alcohol is largely consumed in the system, and that it thus prevents waste of tissue, increases weight, and improves the health of persons who live sparely. He thus speaks: "The inference to be drawn from these experiments certainly is, that when the system is supplied with an abundance of food, and when there are no special circumstances existing which render the use of alcohol advisable, its employment as a beverage is not to be commended. But there are two facts which cannot be laid aside, and these are, that the body gained in weight, and that the excretions were diminished when alcoholic fluids were taken. These phenomena were doubtless due to the following causes: first, the retardation of the decay of the tissues; second, the diminution in the consumption of fat in the body; and third, the increase of the assimilative powers of the system, by which the food was more completely appropriated and applied to the formation of tissues."

"After such results," says Dr. Hammond, "are we not justified in regarding alcohol as food? If it is not food, what is it? We have seen that it takes the place of food, and that the weight of the body increases under its use. Any substance which produces the effects which we have seen to attend on the use of alcohol is essentially food, even though it is not demonstrable at present that it undergoes conversion into tissue. If alcohol is not entitled to this rank, many substances which are now universally placed in the category of aliments must be degraded from their position."

In this sentence Dr. Hammond seems to forget that the doctrines with regard to the real nature of food have been long assumed to be known. Milk is known to suffice for the nourishment of animals for lengthened periods, and its constituents are albumen, fat, sugary matter, water, and common salt. Hence, all substances which are not of like nature are not foods. Alcohol is, therefore, not a food. Is not that quite clear? And why, then, give to alcohol other properties than those it possesses. No one calls quinine a food, or the iodide of potassium, or colchicum, or opium, and yet, all of these, in particular cases, will increase weight and give health and strength.

The idea that alcohol is a food is, then, a confused idea; and when we remember the host of diseases clearly attributable to the use of alcohol, not in large doses either, we can see how important it is not to call it by so misleading a name. Ever since Dr. Magnus Huss published his observations on chronic alcoholism the numerous diseases caused by habitual drinking have been carefully studied by physicians; and, for my part, every year of my life makes me more and more convinced of the grave effects produced on the constitution by even very moderate indulgence. Tremor, with unsteady gait, is one of the most frequent attendants on habitual drinking. The patient cannot hold things as well as he once did. For this nervousness he flies to further doses of alcohol. Paralysis and loss of vision are common sequelæ of such tremors.

I have seen cases where the patient's sense of hearing, of taste, and of smell, were all blunted, as well as his general sensation throughout the body, after many years chronic drinking. Anæsthesia of one side is noticed, and the patient loses the sight of one eye, or cannot hear with one ear, or smells only with one nostril.

Dr. Magnan (*De l'Alcoölisme*, 1874) mentions a case where the patient had long drank and consumed much absinthe; he had, in addition to want of sensation on one side of the body, hallucinations and delusions.

Epilepsy is often caused by drinking to excess. No physician of much observation can fail to have remarked this cause of that formidable nervous affection.

In some cases patients exhibit general excessive tenderness towards light, sound, or touches, and they suffer very greatly when any noise or bright light is in the apartment. Double vision is occasionally seen, from paralysis of one of the motor muscles of the eye, and drooping of the eyelid from the same cause.

Chronic drinkers have usually emotions of a sorrowful character, and are prone to weep at slight griefs; they lose their pluck or *morale*; the temper becomes irritable, and the patient regards as slights and insults those actions which an ordinary person would not remark as such. Melancholy is very common among chronic drinkers, and the patient often has a tendency to commit suicide.

How terribly the intellect is injured by drinking the most unobservant person can easily remark. It is this that leads the sot to commit so many crimes, to lie, to steal, to beat his unoffending relatives, or even to commit murder without any provocation. Delusions are very common among the frequenters of the public-houses, whether rich or poor, and these are usually of a depressing character. Such persons often lose all strength of will, and are unequal to any of the exigencies of life. Wakefulness is very common in drinkers, as well as giddiness and headache.

Of all causes which at the present day most produce diseases of the brain we must place alcoholic fluids in the first rank.

Dr. Hammond, in the paper just alluded to, enumerates the diseases of the brain produced by alcohol, as follows: Cerebral congestion, cerebral hæmorrhage with apoplexy and paralysis, meningeal apoplexy, cerebral thrombosis, softening of the brain, aphasia, acute cerebral meningitis, chronic meningitis, abscess of the brain, multiple cerebral hardening causing tremors, and lastly, every variety of insanity, including general paralysis. Of diseases of the spinal cord there are enumerated spinal congestion, antero-lateral spinal sclerosis, and posterior spinal sclerosis, which is found as the cause of locomotor ataxia; epilepsy, chorea, and cerebro-spinal sclerosis, anæsthesia, trembling palsy, neuralgia, neuritis, and neuro-sclerosis.

One of the most special effects of alcoholic poisoning on the nerves is to produce some hardening of the part, and this causes the tremors of the tippler; and it would seem that children of drunkards are unusually prone to nervous diseases.

Dr. Hammond is, however, an advocate for the moderate use of wine in persons who find it beneficial to their health. He thus speaks: "When a man finds that the wear and tear of his mind and body are lessened by a glass or two of wine at dinner, why should he not take them? The answer may be, because he sets a bad example to his neighbour. But he does not; his example is a good one, for he uses in moderation and decorum one of those things which experience has taught him are beneficial to him. And why should he shorten his life for the purpose of affording an example to a man who probably would not heed it, and who, if he did, is of less value than himself to society?"

There is another answer which I should have made to Dr. Hammond: "How do I know, if I take a couple of glasses every day to my dinner, but that in ten years hence it may not give me gout, or some tendency towards brain and liver disease?" And may I not soon learn to take more than two glasses, even supposing that proved to be totally without injury to me. Besides which, the physician who drinks alcoholic fluids whilst in perfect health loses an argument when addressing the inebriate patient who consults him as to whether he should drink, and what the form of liquor should be. My own reply is in such cases, "I myself drink tea and water when I am thirsty, and I would drink beer or wine, but that I fear I might be damaged by so doing."

Dr. Hammond's experience in the United States has taught him that prohibitory laws, such as those in the State of Maine, fail to a great extent in practice, and drive men and women to Indian hemp and opium. He advises the legislatures to encourage the sale of light wines and beer, and would make it difficult to procure whisky, and make it obligatory to sell none except pure spirit. He has never seen a drunkard cured who was allowed to go at large in an inebriate asylum; all such procure sufficient liquor to keep up the desire.

Dr. Lente, of New York, objects to the idea that all alcoholic liquors are poisonous, and thinks that the declaration of English physicians made some years ago was a weakness on the part of those who signed it. Alcohol, he urges, acts injuriously through its abuse in quantity and quality. In typhus and typhoid fever very large amounts of alcohol are often useful.

The presence of fusel-oil in the cheaper kinds of alcoholic fluids is one of the chief causes of chronic alcoholic poisoning, and hence Dr. Lente would make very strict laws against the adulteration of spirits.

He greatly deprecates the temperance crusade, which aims at striking a blow at the mercantile interests of the country; and alleges that if the teetotal party in the States should come to have power they are capable of condemning to death persons for using alcohol.

Dr. Willard Parker, of New York, admits that the temperance movement of the last half century has undoubtedly accomplished a great deal. Alcohol is a poison, but is one of the most valuable of medicines. As to the advantage or disadvantage of every corner shop practising in this matter, that is another question. He does not understand that alcohol produces force. He does not see how we can call alcohol a food, and his feeling is that no individual system in health is benefited by it. Age or sickness may find food better assimilated by a little wine. There is a perfect cutting short of life and usefulness by the habitual use of alcohol, wine, and the whole list. If there is any difference between wine and rum there is an article in each which produces the effect. The other ingredients are like the clothing we have on; it may be winter or summer clothing. When you come to the matter of beverages, he (Dr. Parker) supposes, as about 80 parts of the body are water, water is the only beverage on earth which repairs the system. Dr. Parker thinks the inebriate asylums have been very great instructors.

Dr. Peters, of New York, remarks on the rarity of injury done to the stomach, even in cases of persons who have drank a good deal of alcohol. When excessive quantities of alcohol have been used the amount of hæmorrhage found in the mucous membranes of the stomach, bowels, and bladder, is certainly extensive, and the injury done very great. The great firmness of the brain in drinkers is remarkable. Alcohol in small quantities stimulates digestion; in large, it coagulates the pepsine and stops digestion. Thirty years ago he, Dr. Peters, was struck with the infrequency of tubercular disease in drunken persons and those who died from excess of alcohol.

On this point my own experience at the North London Consumption Hospital has made me look on chronic alcoholism as having for one of its terrible sequelæ the production of phthisis pulmonalis. This is well seen in drinkers after the age of forty or fifty; in a large proportion of persons with phthisis at these ages intemperance has been the cause of the fatal disease. I cannot understand how Dr. Peters came to the conclusion he arrived at.

Dr. Clymer, of New York, in the same debate at the Neurological Society, thinks that an appreciable quantity of all the alcohol taken into the system is eliminated unchanged. No proof has been given to him that alcohol deserves the name of a food. Alcohol, indeed, pervades the tissues, and remains in the system unchanged for days together.

The action of this alcohol on the tissues is peculiarly expended on the connective tissues—the mortar-bed of the organs. Transformation of this tissue gradually takes place, and then substitution ensues, and sclerosis. We have long been aware, without being able to follow the morbid mechanism, of the hob-nailed liver and contracted kidney of drunkards; but it is only recently that we became aware of the same alterations in the nervous system. In the latter there is a double morbid process, whilst the primitive action would seem to occur in the connective tissue, either from the irritative action being transmitted to the nerve-elements proper, or from purely mechanical effects, or from both, which is most likely; we have regressive changes, fatty degenerations, and ultimate destruction of these elements—that is, we have *sclerosis* and *stratosis*.

Alcohol, then, is surely not a food. "There is every argument against digestive assimilation, the first step in the process of nutrition; no known article of diet passes first unchanged into the several organs, dwells there a certain time, and then becomes destroyed; or after a variable stay, leaves as it entered. Alcohol may be potential in developing temporary bodily energy—and this is probable; but that it builds up and maintains tissue is at least unproved, and, I believe, not true; but that it does act as a local poison is, I conceive, undeniable, and I base my belief on experimental, clinical, and pathological experiments."

The immense amount of insanity produced by drunkenness has often been referred to. In an article in the *British Medical Journal* of August, 1874, it is alleged that more than one-half of the cases in English lunatic asylums have been directly or indirectly due to this one cause.

Dr. Crichton Browne finds that any form of mental disease may be produced by drunkenness. Out of 600 or 700 cases of insanity directly due to alcohol which he has seen, he has come to recognise four forms of mental disease as being specially caused by it—chronic delirium tremens, monomania of suspicion, alcoholic dementia, and, lastly, dipsomania.

Dr. Browne would not class delirium tremens with insanity at all, but with regard to chronic delirium tremens, or mania *à potû*, that is a delusion, and a proper case for being confined in a lunatic asylum.

C. R. Drysdale, M.D.

BRITISH MEDICAL ASSOCIATION.

SELECTIONS FROM THE PROCEEDINGS OF THE SECTIONS.

MEDICAL SECTION.

One of the most interesting papers in this section was "Cases of Convulsion from Organic Brain Disease," by Dr. Gowers, of University College.

Case I. *Unilateral Convulsion beginning in both Frontal Muscles, in a Case of Renal Disease, with an old Hæmorrhage into the opposite Cerebral Hemisphere.*—A little girl, aged 8 years. In the first two attacks the earliest spasms appeared to be at the angle of the mouth, on the left side; but, in all that followed, this was preceded by movements in the frontal muscles. The spasm in the frontal muscles, with which the fit commenced, was clonic, and occurred simultaneously and equally in the two frontal muscles. In a few seconds, clonic spasm set in in the orbicularis of the eyelids, on each side, but greater on the left than on the right. The left angle of the mouth was then twitched outwards, apparently by the action of the zygomatic muscles, the right side being quite motionless. Next the left arm began to jerk, apparently as a whole, and soon afterwards the left leg. The muscles passing from the limbs to the body were involved, and also the muscles of the abdomen. After lasting about a minute, the spasmodic contractions subsided. When the movements were at their greatest intensity, there was a little contraction of both *levatores menti*; but, with the exceptions mentioned, there was no affection of muscles on the right side. During the fits, and also in the intervals between them, the eyes were directed to the right, the axes remaining parallel, and were not moved to the left. During the fit the pupils were widely dilated.

In the intervals there was no return to consciousness; then, in emotional movements, the *right* side of the face alone moved.

At the post-mortem examination there was found an old clot, apparently of at least several weeks' duration, which was situated above the right lateral ventricle, just inside the convolution of the corpus callosum, the white matter of which it evolved. In size, the clot was about as large as a walnut, and its centre was about midway between the anterior and posterior extremities of the corpus callosum. The clot itself did not extend outwards beyond the middle of the roof of the ventricle, but adjacent softening reached as far as the junction of the roof and outer wall, so as to approach within one-sixth of an inch of the outer part of the corpus striatum. The softening had extended irregularly to the surface of the convolution of the corpus callosum, opposite the clot, so as to involve the grey matter at this spot. Some minute extravasations over the right parietal and occipital lobes, beneath the pia mater, constituted the only other lesion to be found in the brain. The heart was much hypertrophied. The kidneys presented extreme and old-standing disease.

Case II. *Convulsive Seizure beginning unilaterally by a Co-ordinated Movement of the Left Hand, and due to Thrombosis in Veins on the Right Frontal Lobe.*—A man aged 30, in the last stage of phthisis, after a day or two of mental dulness, was suddenly seized with a convulsive attack, which lasted about a minute, and was repeated every ten or twelve minutes, until his death, about two hours afterwards. After the first fit no manifestation of consciousness could be obtained.

After the post-mortem examination the whole length of the superior longitudinal sinus contained an old discoloured and partly granular clot, which did not quite fill it. It did not pass into the lateral tributaries of the sinus, except in front, where it extended on each side into a vein from the surface of the frontal lobe. The clot on the left side extended for about two inches outwards, and was *not* accompanied by marked hyperæmia of the convolutions. That on the right side, however, extended across the frontal lobe to its outer surface, as far as the short anterior limb of the fissure of Sylvius, and crossing the anterior portion of all three frontal convolutions. The veins plugged were widely distended by clot, which was dark red, mottled irregularly with paler portions. Several small branches from this right vein were also plugged for about three-quarters of an inch from the vein itself. Over the area corresponding to the blocked veins, the pia mater covering the convolutions was intensely hyperæmic and dotted over with small extravasations. On section, the grey matter of the convolution was much more vascular than that of the opposite side, but was not softened. The exact area of the hyperæmia extended in the form of a band across the three frontal convolutions, involving the greatest area of the superior and the least of the inferior convolutions, and ceasing in front half an inch from the anterior extremity of the hemisphere. There was no abnormal appearance in the rest of the brain.

Case III. *Tumour of Left Hemisphere associated with Fits, which were preceded by an Aura in the Left Wrist; the Aura, when arrested by a Blister, being tranferred to the Opposite Side.*—The case is that of a girl, aged 18. This aura existed before even the earliest attacks. About two years after their commencement a blister was applied to the left arm above the point in which the fits seemed to begin. For a time they were less frequent, and those which occurred commenced by a similar sensation in the *right* wrist. Afterwards, however, the aura again returned to the left wrist. Attacks occurred once or twice a week in spite of treatment, and maintained the same general character, and only ceased when decided phthisical symptoms manifested themselves. At no time was headache a prominent symptom.

After death, the sole lesion discoverable in the brain was a small tumour, about the size of a walnut, situated in the white substance of the *left* hemisphere, above the middle of the lateral ventricle. Its outer boundary was even with the junction of the roof of the lateral ventricle with the corpus callosum. Internally, it extended as far as the grey substance of the convolution of the corpus callosum, which was much thinner opposite the tumour than in front or behind it, and the upper part of the convolution, contiguous to the calloso-marginal fissure, was somewhat softened. A thin layer of white substance lay beneath the tumour, forming the roof of the lateral ventricle. The substance of the growth was soft, vascular, having a reddish semi-translucent aspect.

SECTION OF PUBLIC MEDICINE.

"The Economy of the Dispensary System of Poor-law Medical Relief." By Joseph Rogers, M.D.

"On the Correlation of Sick Poor Relief and Public Health Administration." By Henry W. Rumsey, M.D., F.R.S.

"Hospital Hygiene, illustrated by references to the Norfolk and Norwich Hospital in the present, past, and future." By Michael Beverley, M.D.—Dr. Beverley gave a brief history of the rise and progress of the hospital, to show that care was taken at the outset to avoid overcrowding and bad ventilation. Far happier would have been the history of the latter days of the hospital had it retained in its hygienic simplicity its pristine form, that of the letter H, which could hardly be recognised in the sadly encumbered edifice of the present day. Dr. Beverley went fully into the condition of the hospital, and his paper produced a lively debate.

"Water-Analysis, as it should, and as it should not, be performed by the Medical Officer of Health." By Cornelius B. Fox, M.D.—Dr. Fox remarked that the medical officer of health should not only be prepared to answer such a question as "Does a water contain a deleterious amount of organic matter?" but should be able to reply to such interrogations as "Is this water wholesome and good?" "Which of several specified wells or springs furnishes the purest water?" &c. In order to answer the first query, the majority of health officers have been in the habit of mixing with the water to be tested a solution of permanganate of potash. Dr. Fox showed (1) that this salt sometimes fails to afford any indication of the presence of organic matter in water that may contain a large quantity of it; and (2) that, in those cases where it affords its characteristic reactions, this test is not sufficiently sensitive. Examples were given in proof of these statements. The permanganate of potash test seems to have become obsolete amongst analytical chemists, who maintain that the salt does not oxidise albuminous matters. Dr. Fox desired that the medical officers of health should substitute the Nessler process, which can alone be depended on for the determination of the organic matter. Wanklyn laid down the rule that a water should not contain more organic matter than .08 parts per million. The amount of ammonia present in a water must, however, be taken into consideration in conjunction with that of albuminoid ammonia, for the latter is convertible into the former. In the majority of cases that present themselves, the question propounded was as to whether the amount of organic matter present in a water (for nearly every water contains some organic matter) is within the permissible limit. This could be answered in half-an-hour. If it become needful to estimate the *amount* of organic matter present in a water, forty minutes will be occupied. Mr. Wanklyn, in the last edition of his work on "Water Analysis," writes: "I should be inclined to regard with some suspicion a water yielding a considerable quantity of free ammonia along with .05 part of albuminoid ammonia per million." Dr. Fox did not agree with Mr. Wanklyn, and furnished the following analyses which he had himself made of deep artesian wells renowned for the purity of their waters.

	PARTS PER MILLION.	
	Free Ammonia.	Albuminoid Ammonia.
A. Depth, 385 feet	.59	.04
B. Very deep Artesian Well	.41	.07
C. Depth, 330 feet.	.37	.06
London Water Supply (Thames)	0.01	0.06
" New River	0.00	0.06
" Kent Company	0.01	0.02
Very bad Water. Thames Water at London Bridge.	1.02	0.59

Dr. Fox proceeded to point out the different sources from which free ammonia in waters may be derived. In order that the medical officer of health may be enabled to answer such questions as "Is a drinking-water wholesome and good?" "Which of several specified springs or wells, all situated, perhaps, in one village, furnishes the purest water?" it is necessary to ascertain, in addition to the amount of organic matter present in it, the total quantity of solid residue and the degree of hardness. Physicians are well aware of the deleterious effects on the composition of the blood of waters which contain a large amount of saline matters, if taken frequently for long periods of time. Good spring-water usually contains about 17, 18, or 19 grains per gallon of solids. Dr. Fox had found as much as 485 grains per gallon of solid residue in a water. The maximum amount of solid residue permissible is from 30 to 40 grains per gallon. Sea-water holds in solution from 2,400 to 2,700 grains of saline matters per gallon. The hardness of a water is an important matter, if we would give an opinion as to whether it is or is not wholesome. Good waters average between 11 and 16 degrees of hardness.

"The Relative Frequency, the Causes, and Modes of Suicidal Attempts in the Army and Navy." By W. R. E. Smart, M.D., C.B., Inspector-General, R.N.

"The Cause, Mode of Propagation, and Non-contagious Nature of Enteric Fever." By Angus Mackintosh, M.D. —During the last eighteen months Dr. Mackintosh had had no fewer than one hundred and fifty cases of enteric fever in his district. In the outset, he remarked that he believed the disease to be due to, or generated by, the decomposition of organic matter, and by that alone. Since his appointment as Medical Officer of Health to the Chesterfield District, he had watched with the utmost care all cases that had occurred therein, and had taken full notes to satisfy himself concerning the mode of propagation and other traits of the malady. The disease had been endemic in the union, and more than usually fatal, for the last century; in fact, at so remote a period as the Roman invasion, Chesterfield and its neighbourhood were known as hotbeds of fever and all other catching and spreading evils. This fever had been for ages known all over the civilised world; and, although the subject had been investigated, yet professional men differed widely in their opinion as to whether the disease arose *de novo*, or was always conveyed from one person to another. His own experience was in favour of the former view, and was opposed to the latter.

"A New System of Ventilating Drains and Sewers." By Angus Mackintosh, M.D.

"The Geographical Distribution of Disease within the Area of the Combined Sanitary Authorities in the Counties of Northampton, Leicester, Rutland, and Bucks." By Alfred Haviland, Esq.

"Tobacco and Public Health." By C. R. Drysdale, M.D.—Dr. Drysdale not unfrequently saw very grave evils arise from the use of Virginia and other forms of tobacco used in England. Thus, in one week in 1874, he saw two young men with almost complete loss of vision, the one from smoking about an ounce of shag daily for years, the other from chewing tobacco constantly. Dyspepsia, diarrhœa, and piles were, he conceived, often caused by the use of tobacco; and palpitation of the heart and functional disease of that organ were commonly met with in smokers, especially in young men of delicate health. Chronic smoking caused a peculiar aspect of the tongue; in some cases, the organ appeared as if brushed over with nitrate of silver. Stomatitis and dusky fauces were common in smokers; smoking tended, unless great cleanliness were observed, to injure the teeth greatly; and, among the poorer classes, it was quite deplorable to see the filthy condition of mouth caused by addiction to tobacco in many instances. It was fortunate that women did not as yet use tobacco in England; for it was found, in the State tobacco-factory at Iglau in Vienna, that the female operatives who were suckling had their milk so impregnated with nicotine as to kill the infant in a large proportion of cases. Besides which, tobacco-smoking contaminates the air of rooms and railway-carriages, and is disagreeable to everybody, male and female, and not only to smokers. The use of tobacco favoured paralysis of different kinds, paralysis agitans especially; and there could be no doubt in the minds of all who closely, and without prejudice, studied the case, that tobacco-smoking was quite unlike tea or coffee; it was simply a vice, and not useful, but injurious to health.—Dr. Bateman (the Chairman) said he approved of Dr. Drysdale's paper, and thought the subject exceedingly interesting and of great importance to the health of the public.—Dr. Kenyon mentioned cases of amaurosis caused by tobacco-smoking. —Dr. Fussell thought that tobacco-smoking had a very injurious effect upon the health.—Dr. Glover and Dr. Pitt also made remarks in favour of the paper.

"The Districts of Medical Officers of Health." By W. Armistead, M.B.—Dr. W. Armistead exhibited a map showing the districts of medical officers of health in England and Wales, with the salaries paid to each. He said that the appointments had been made without any regard to uniformity. Perfect freedom of action was allowed by the Public Health Act, 1872, to the various urban and rural sanitary authorities thereby created, and the result was a muddle.

"The Disposal of Slops in Country Villages." By CORNELIUS FOX, M.D.—One of the greatest difficulties with which health officers in rural districts have to contend arises from the inability to dispose satisfactorily of the slop-water. Dr. F. asked the Local Government Board questions, to which the following replies had been received: 1. Mere slop-water, without fœcal matter, is not sewage within the strict meaning of that term. If, however, such water were allowed to flow into ditches, or into ponds, and create a nuisance, it might be dealt with under the provisions of the Nuisances Removal Acts. 2. The Board do not consider that, under the Sanitary Acts, it would be illegal, under ordinary circumstances, to convey slop-water into a canal communicating with a river or with the sea, if the volume of the slop-water is but small as compared with that of the water in the canal. 3. It might not be illegal, in the sense of an offence against the Sanitary Laws, to convey the slop-water, whether deodorised or not, into a water-course; but in such a case there might occur a breach of private rights.

SURGICAL SECTION.

We have considered at length in another column the story of Nélaton's method, as told at the Section.

"Excision of the Hip-joint for Disease." By JOHN CROFT, F.R.C.S.—Mr. C. expressed himself strongly in favour of the subperiosteal mode of operating, as preserving the attachments of all muscles belonging to the great trochanter, and the periosteum of the neck of the great trochanter and top of the shaft.

"The Management of the Pedicle in Ovariotomy." By J. MARION SIMS, M.D.

"On the Treatment of Wounds." By G. M. HUMPHRY, M.D., F.R.S.—Cut surfaces seldom fail to adhere together and grow together—that is, to unite by first intention—if they be kept in apposition, however much they may have been exposed to air, as in wounds of the face, scalp, and fingers, where this may commonly be done. This, therefore, is the great desideratum. The obstacle to it is the accumulation of bloody fluid in the wound keeping the surfaces apart, decomposing, and causing suppuration. No precautions hitherto have assured against this. Anything giving that assurance would be a most valuable discovery. The decomposition may be lessened sometimes, though not commonly prevented, by antiseptics, but fail to provide for escape by drainage. Professor Humphry had long adopted the plan, which he had brought before the Association at the Cambridge meeting in 1864, of approximating the edges by sutures, and leaving the wound quite uncovered and dry. No dressing being used, the pain of removing and reapplying plasters, &c., is avoided. This, combined with some antiseptic or blood-coagulator to the surface of the wound, and a space left for escape of bloody fluid, was, he believed, the mode most likely, on the whole, to promote quick union of large deep wounds. He did not think that torsion of vessels or carbolised ligatures presented much advantage over the hemp ligature. A splint was an adjunct that might well be oftener used. He had tried the hydrate of chloral (five to eight grains to the ounce of water), and found it a valuable disinfectant, and recommended others to try it. In the case of wounds for the removal of cancer, he had for many years encouraged suppuration, and tried to retard healing, believing that this tended to delay the return of the disease. In some cases, he had inserted issues at the time of the operation or subsequently, and he thought with benefit. He believed the administration of opiates to be generally prejudicial in the treatment of wounds.

"A Case of Double Popliteal Aneurism." By G. M. HUMPHRY, M.D., F.R.S.—A healthy labourer, aged 37, was admitted to Addenbrooke's Hospital, Cambridge, with an aneurism in the right ham. The femoral artery was tied with carbolised catgut ligature on November 20th, 1873. Carbolic dressing was applied. The wound progressed unfavourably. Profuse hæmorrhage occurred on December 9th and 16th. The bleeding vessel was secured with hemp ligatures. On December 18th, while the patient was very exhausted from loss of blood, an aneurism was discovered in the left ham; it was enlarging rapidly, and with so much pain, that the femoral artery was tied on December 25th with hemp ligatures in two places, and the artery divided between them. Sutures only were used. The wound healed quickly; but pulsation in the ham returned on the second day, and increased rapidly and painfully; it was arrested by forcible extension of the limb. This was followed by suppuration in the aneurism. The pus was evacuated by the trocar, and the patient recovered with both aneurisms cured.

"Some Points in the Anatomy and Surgery of Talipes Varus." By G. BUCHANAN, M.D., Glasgow.

"A Mode of Employing Pressure in Cases of Inflammatory Enlargement." By S. M. BRADLEY, F.R.C.S.—Mr. Bradley described his method of treating certain cases of inflammatory enlargement, and dwelt particularly upon the mode of compressing the testis, the mamma, and various parts of the trunk and extremities. The first he effected by means of elastic straps laced around the enlarged testis; the second, by a modification of Salmon and Ody's truss; and the third, by a piece of sheet-lead enclosed in wash-leather, with elastic bands laced around the trunk or extremities.

"Notes on a Case of Gastrotomy." By JOSEPH ALLEN, M.R.C.S.

"A Case of Vesical Calculus." By A. H. DOLMAN, M.R.C.S.

"When and how long should Mercury be used in Syphilis?" By. C. R. DRYSDALE, M.D.

"Preventive Surgery in its relation to Injuries from Agricultural Implements." By JOHN T. SKRIMSHIRE, M.D.—The author advocated preventive legislation.

OBSTETRIC SECTION.

"On the Tensile Strength of the Fresh Mature Fœtus." By J. MATTHEWS DUNCAN, M.D.—By a series of simple experiments, Dr. D. showed the limit of the force that could be exerted in dragging a fœtus through a contracted pelvis. These experiments went to show that an average traction-force of 120 lbs., which was far greater than any natural expulsive force, caused decapitation, the spinal column giving way between the fourth and fifth cervical vertebræ. It was difficult to employ an extractive force of one hundred weight by ordinary means. The author advocated surgical interference in many cases.

"On the Treatment of Mechanical Dysmenorrhœa and Chronic Induration of the Cervix Uteri." By A. B. STEELE, L.K.Q.C.P.

"On Dysmenorrhœa." By C. R. DRYSDALE, M.D.—The object of this paper was to state the conviction of the author that over much attention had of late years been paid to the mechanical treatment of painful menstruation, to the exclusion of hygienic and therapeutic remedies of less heroic but no less beneficial nature. Dr. D. thought that the surgical school had of late laid far too much stress on the supposed necessity for cutting operations in dysmenorrhœa, and that sufficient attention had not been given to the use of other remedies.

"Application of the Galvanic Cautery to Gynæcology." By J. BRAXTON HICKS, M.D., F.R.S.—After describing the mode of action of the various forms into which the platinum wire is arranged, Dr. H. explained their adaptation to the various diseases met with in obstetric practice, comparing it, as he proceeded, with the other forms of cautery, with the knife and *écraseur*.

"On Decollation as a mode of Delivery in Shoulder Presentation." By FREDK. W. WRIGHT, M.D., Derby.

"A Case of Rupture of the Uterus during Labour, in which the Patient Recovered." By T. MORE MADDEN, M.D.—The author alluded to ninety-two cases in which rupture had occurred, only one of the patients recovering. He himself had seen four cases; only one recovered, the details of which were given.

"Remarkable Case of Complex Labour." By T. More Madden, M.D.—In this case there was a complete separation of the uterus from the vagina, the rent running round the cervix. It was only discovered by post-mortem examination. The os had been rigid during the first stage of labour, which occupied thirteen hours.

"The Rectum in its relation to Uterine Disease." By Arthur W. Edis, M.D.

"On Instrumental Aid in the Second Stage of Labour." By J. Craig Waddell, M.D.—The author alluded to the several instruments of extraction known to us—the blunt hook, the fillet, the vectis, and the forceps—and gave his reasons for preferring the vectis to the forceps, being more readily applied, occupying less room in the pelvis, and capable of being applied in any position of the head.

"The Long Forceps, the Short Forceps, and the Vectis." By Edgar G. Barnes, M.D., Eye.—The author recorded his experience in twenty-six cases. In twelve, he employed the long, in fourteen, the short forceps. All the mothers recovered; twenty-four of the children were born alive. He preferred the long to the short forceps, and thought that the former, in the majority of instances, far superior to the vectis, which latter was only adopted to remedy malposition of the head, whereas the long forceps accomplished this, as well as remedied slight disproportions between the fœtal head and pelvis, and augmented the deficient *vis a tergo* by supplying a *vis a fronte*.

"On Maternal Impressions." By J. Clapperton, L.R.C.P. Ed.—Mr. Clapperton read a paper on the effects produced upon the fœtus by fright experienced by the mother in the early months of pregnancy. He believed in maternal impressions, and several members confessed to a similar opinion.

"A Case of Complete Inversion of the Uterus: Profuse Post-partum Hæmorrhage and rapid Death of the Fœtus." By T. Chambers, M.R.C.P.

"A Case of Retroflexion of the Gravid Uterus: Retention of Urine: Vesical Hæmorrhage: Transfusion with Lamb's Blood: Death." By T. Chambers, M.R.C.P.

"Obstetric Apparatus."—Dr. E. Divers showed an arrangement for utilising the force usually wasted on the bed-posts, giving comfort and support during labour.

JOTTINGS FROM JOURNALS.

Treatment of Typhoid Fever.—Dr. Compin, finding it difficult to reconcile patients and their friends with the practice of cold immersion in fever, had recourse to the pardonable artifice of adding a few drops of phenic acid to the water beforehand. This premised, he practised aspersion over the entire surface with the utmost advantage, thus lowering the fever, and inducing such relief that the sufferer himself was anxious for its repetition in in a few hours. The patient and his friends ascribed the relief to the phenic acid, and the practitioner had the satisfaction of securing the great advantages of cold aspersion without running counter to his prejudices.—*L'Union Médicale.*

Typhoid Fever.—During the recent epidemic of typhoid fever at Lyons there occurred certain atmospheric changes of considerable collateral moment. The temperature rose suddenly, while the barometer experienced a heavy fall. Now, the falling of the barometer is always coincident with an increased discharge of the airs dissolved in water. This may be witnessed at such periods in the increased escape of marsh gas, and is exemplified in the operation of the common hubble-bubble pipe for smoking, so named. The ill-washed gutters of the streets and quays of Lyons emitted the most noisome exhalations (*des puantes émanations*). The quarter of the Bourse, the quays of the Rhone, both close to the public Lyceum, the Quai de Retz in especial, all abounding with dirt and stench, are successively implicated. Out of 900 boys at the Lyceum, 80 were laid up with typhoid fever; the institution, consequently, was closed, by the decision of the rector of the academy. This fever was characterised by evening exacerbations, and Dr. Bondet terms it, in certain cases, a regular abortive typhus. Without going into further details, it may be said that this epidemic of typhus, along with only too many of the same kind, points trumpet-tongued to the necessity of discontinuing the employment of sewers, which are no other than elongated cesspools, and the substitution of earth-closets, along with the early removal of all animal and vegetable refuse, instead.—*La France Médicale.*

Dysentery.—Dr. Bodo Wenzel has had occasion to witness numerous cases of dysentery, and of all the remedies to which he has had recourse he gives the preference to injections of ice-cold water. In a case in which, as ship's surgeon, he employed these injections, the results were so striking as to induce him to have recourse to them ever after. In the case in question there were acute abdominal pains, intense fever, and atrocious tenesmus. The injections were repeated every two hours, with a success that surpassed all expectation. Fever abated, blood was no longer discharged, and the tenesmus disappeared. The benefit was so evident that the patient besought the repetition of the remedy whenever the pains recurred. It is needless to say that Wenzel has now always recourse to it. Whether the results in other hands will prove equal remains as yet to be seen.—*Annales de la Société Médicale d'Anvers.*

Epilepsy.—Dr. Crichton Browne's success with the nitrate of amyl in arresting the further progress of this distressing malady when the aura has once declared itself justifies the more frequent employment of the remedy in question, as well as this further recurrence to the subject. If it should turn out generally efficient, it would in many cases prove a most desirable resort.

Ventilation of Sewers.—An article appears in *Public Health* on the ventilation of sewers. Very good; but there ought really to be no sewers to ventilate. With the universal introduction of properly arranged and regulated earth-closets there would be no occasion for feculent sewage, and typhoid fever, as depending on such, would speedily come to an end. The writer of this was in a house of pretention, yet permeated from end to end with sewer emanations; and the surveyor of the mansion of a certain duchess detected a long slit in the soil-pipe placed actually, with a very slender covering, on the way to her drawing-room. Cases of typhoid have broken out so far west as Cadogan Place, in dwellings where sanitary arrangements have been detected of the most faulty description.

Ozone.—Dr. Lender ozonises chambers very successfully by means of a mixture of the protoxide of manganese, or of the permanganate of potash and oxalic acid. Two spoonfuls of this powder, moistened with twice the amount of water, and a trifle more of water every two hours, emits ozone freely. Gold and silver, however, excepted, it oxidises metals rapidly.—*Archivio di Medicina Chirurgia ed Igiene.*

Emetics.—In is worth knowing that emetin and apomorphia—the emetin $\frac{1}{30}$ of a grain in acidulated water, and of apomorphia $\frac{1}{100}$ of a grain—act as safe and pleasant emetics, inducing no local irritation.—*Boston* (New England) *Clinic.*

In the *Cincinnati Clinic* are published cases of trichinosis by Dr. James Lamb. They were those of a widow and her son, Henry Thrannest, aged 14. These cases manifested themselves with hot dry skin, urgent thirst, and coated tongues. These cases were followed by those of two younger children, a boy and girl, Jacques, 9, and Minnie, 7. Two of the children perished, but the others recovered. The remedies consisted mainly of the arseniate of potash, alternated with quinine, the tincture and muriate of iron. They, the subjects of these attacks, had eaten leberwurst, or sausage made of the flesh of diseased hogs. The number of trichinæ in the diseased pork was estimated at 80,000 to the cubic inch.

Hay Fever.—Going on the presumption that this was a parasitic affection, Helmholtz injected into the nasal passages, three times daily, neutral sulphate of quinine, with the utmost success. In effect, upon examining the nasal excretions with the microscope, a multitude of minute organisms similar to vibrios were discoverable. It is worthy of observation that insecticides—that is to say, a mixture of lime, sulphur, and alcohol, laid on with a brush, the tree being previously well scraped and brushed—served to get rid of insects and of the moss which formed their nidus, restoring thus the trees to perfect health.—*L'Oreille Médicale.*

Chloral.—Dr. Oré, of Bordeaux, has addressed a short memoir to the Société de la Chirurgie on the injection of chloral into the venous circulation. He has gone so far as from two to six grammes. He declares that there is no anæsthetic so potent. The insensibility in the animals thus operated upon was so great that the electric current alone interrupted it. In a case of tetanus occasioned by the contusion of the left middle finger, he injected twice, at an interval of some minutes, nine grammes of chloral dissolved in ten grammes of water. At the second injection the sufferer fell into a deep slumber, the breathing became calm and regular, the pulse was 70, and the insensibility so complete that the nail of the bruised finger could be avulsed without a trace of suffering. Next day the injection was repeated, and by the third day the severity of the malady was much abated. M. Verneuil witnessed five recoveries in tetanus by the employment of venous injections of chloral, and M. Boinet two. Should this remedy be equally successful in other cases it would prove an infinitely desirable innovation in regard to the treatment of tetanus, commonly so intractable.—*Le Mouvement Médical.*

ABOUT BOOKS.

Monthly Report on the Progress of Therapeutics. **Edited for the *Edinburgh Medical Journal* by W. Handsel Griffiths, Ph.D., L.R.C.P.E., Licentiate of the Royal College of Surgeons of Edinburgh; Librarian to the Royal College of Surgeons in Ireland; Honorary Member of the Ontario College of Pharmacy, &c.**

We have before us No. 1 of this series. The reports promise to be of interest, and are somewhat similar to our own "Chronicle," but of course refer only to therapeutics, while our "Chronicle" extends to all departments. We give the following examples :—

Toxicological and Physiological Action of Emetine.—A. Evaristo d'Orenellas has been studying this subject. He finds that it acts as a topical irritant to the mucous membrane and to skin denuded of epidermis. It induces vomiting when injected into the cellular tissue, although not so powerfully as when it is taken into the stomach. It causes vomiting by irritating the peripheral terminations of the pneumogastric in the stomach and duodenum. In moderate doses it reduces the respiration, circulation, and animal temperature, but does not directly modify vascular tension. It is curious that under its influence the superficial cutaneous temperature is decreased, while the internal temperature is raised. It causes relaxation of the muscular system, and combats the convulsive phenomena induced by strychnia.—*Brit. and For. Med.-Chir. Rev.*, July, and *Revista di Medicina, Chirurgia e Terapeutica.*

On the Employment of Apomorphia as an Emetic.—M. Carville (*Soc. de Biologie*, 20th June) recommends the employment of apomorphia as an emetic in some cases of poisoning when the poison is yet in the stomach. It produces powerful emetic effects when injected under the skin in doses of a centigramme. It is important to make the solution of apomorphia *when required for use*, for the solution very rapidly loses its activity.

Hypodermic Injection of Sulphate of Magnesia as a means of producing Purgation.—*Société de Biologie*, 20th June.—M. Carville related some experiments performed by Professor Vulpian and himself, which went to prove that sulphate of magnesia, when subcutaneously injected, can produce catharsis. A discussion arose as to the mechanism of purgation, some of the members objecting to the view that purgatives act by determining an intestinal catarrh. Rabuteau believes that the theory of osmose explains the phenomena of purgation.

Toxic Effects of Thallium.—At the *Societe de Biologie*, on the 18th April, M. Rabuteau called attention to this subject. The fact that the salts of thallium are more toxic than those of lead affords an illustratien of the law that a metal is more active as its atomic weight is higher. The salts of thallium poison after the manner of salts of mercury and copper. Thallium is a muscular poison, causing the muscles to lose their irritability. M. Henocque states that the spectrum of thallium is easily recognised by its characteristic green ray.

On the Properties of Muscarine.—M. Prévost directed the notice of the *Societe de Biologie*, 18th April, to some physiological properties of muscarine, the alkaloid or glucoside of *Ammanita muscaria.* It is a very violent poison. It arrests the heart in diastole, unlike digitaline, which arrests it in systole. Schmiedeberg indicated its antagonism with atropine. Muscarine increases the flow of saliva, *directly* exciting the salivary glands. It excites the lachrymal glands, also promoting the flow of tears. Atropine will check the salivation induced by muscarine.

Notes on the Preservation of Health: Accidents, Emergencies, Poisons, &c., and How to Treat Them, for Domestic Use. **Edited and compiled by H. S. Purdon, M.D. Belfast: M'Cracken and Mogey. 2nd Edition.**

The Editor of the above little *brochure* is well known to the readers of The Doctor; and although Dr. Purdon's "Notes" are intended for non-professional readers, still, we believe that they might be read with profit by students and junior practitioners, whilst the price of the book brings it within reach of everyone. For those living in country districts and about to emigrate it will be extremely useful. We are strongly opposed to domestic dabbling in physic, and are glad to notice that the compiler of the work before us confines himself solely to such surgical and medical accidents, &c., where time and prompt assistance are of the utmost importance. The rules laid down under each heading are short, practical, and to the point. We heartily recommend this little work.

MEDICAL OPINION.

A WHOLESOME WARNING.

The *Lancet* recently observed that prosperous, well-to-do men are suddenly struck down, apparently well, in the middle of their work. But when the incidents of their final illness and death become known, it is found that, although they have to all appearance died suddenly, they have been suffering from chronic disease or from exhaustion for years. Yet they have gone on, have kept their position in the race, all to gain merely a little more honour, a little more money, and to die ten, fifteen, or twenty years sooner than they ought or need to have died. Many names rise to our mind; but we will merely take four, all well-known physicians, whose names, lives, and deaths are public property—Dr. Todd, Dr. Brinton, Dr. Forbes Winslow, and Dr. Frederic Bird.

Dr. Todd died in the night, of intestinal hæmorrhage, whilst carrying on an enormous and wearing practice, and after his usual hard day's work. A post-mortem examination showed that he was suffering from cirrhosis of the liver, which had occasioned the hæmorrhage. Now, no man can die of such a disease without having been and felt very ill for months; and so accomplished a physician would never have been entirely mistaken in his own case, and fancied himself quite well when he was ill enough to die. Still he never stopped, but went on to the last. Dr. Brinton died suddenly, of uræmia, also in the midst of his work, and then it was found that he had been suffering from chronic albuminuria in an aggravated form for several years and knew it! Still he never stopped. Dr. Forbes Winslow had a very severe illness four or five years ago—stone in the bladder and pleurisy—which kept him in his bed-room for months, and left him an invalid. Still he repudiated the warning, and went on, winter and summer, with his large practice and heavy professional duties, to die four years later of albuminuria, foreshadowed by the former illness. Lastly, Dr. Frederic Bird, whose death is still recent, passed away in a few days, in June, of bronchitis. Such a form of death in Midsummer, in an apparently sound man, indicates complete organic exhaustion; it indicates that the vital powers had been so worn by constant and incessant labour that he could not survive one of those accidental attacks of every day illness which ought only to kill weak, sickly children, and aged worn-out men and women.

Another phase of the same neglect of "warnings" on the part of our professional brethren is seen in our obituary nearly every week. Therein we read of the final departure of Mr. ——, a less-known brother, retired from practice—often it is added, with a comfortable independence—six months, a year, eighteen months previously. This means that he clung to work and to money-making until positively obliged to withdraw, from sheer incapacity to accomplish his duties, merely to die a little later from the disease which drove him out of the ranks.

In the army and navy, men are obliged to retire while still healthy and vigorous, long before they are sixty. With a modest independence, freed from the worries and anxieties of life, they seem to live on all but indefinitely, mostly dying between seventy and eighty, and often at a more advanced age.

Would that our prosperous professional brethren would employ in their own case the knowledge they so freely give to others. Would that they could be satisfied to retire early enough to save or prolong life; or that they would be satisfied with one-half, one-third, or even a quarter of their usual income. If they were so satisfied, they might pass one-third or one-half of the year away from the scene of their professional labours: the winter on the Nile, or anywhere on the Mediterranean; and the summer in the country in England. Absence, either occasional or regular, does not destroy the professional income of men who have gained the esteem and confidence of the public by twenty or thirty years' labour; it merely *diminishes* it.

NOTES, NEWS, AND GOSSIP.

LONDON HOSPITAL.

The London Hospital is being extensively enlarged, and its present accommodation greatly increased. The Grocers' Company have presented the authorities with a donation of £20,000 for the erection of a new wing, to be called the Grocers' Wing. Adjoining this wing an extensive mortuary is being erected, which will be fitted up with every modern improvement. The total cost will probably exceed £30,000.

MEMORIAL TO THE LATE DR. ANSTIE.

At a large meeting of the professional and private friends of the late Dr. Anstie, lately held at the house of Dr. George Johnson, it was resolved that some permanent memorial of his career should be established, and considering that the widow and three young children were but slenderly provided for, and that in consequence his only son would probably be unable to complete the education which his father intended for him, it was felt that the proposed memorial might fittingly take the form of a fund to be devoted to this object.

DEATH OF DR. ARTHUR JACOB.

Dr. Jacob died on the 21st of September, at the ripe age of eighty-four. He was a great anatomist, and three times elected President of the Royal College of Surgeons in Ireland. Ophthalmology was his favourite department, and by his patient investigations he advanced it to a point unknown before. An interesting memoir of him appears in the *Medical Press and Circular*, a journal founded by him some six and thirty years ago.

BOILED HAMMERS.

Old Dr. Twitchell, of Keene, once wanted to blister some one in a farmhouse, far from home. He had nothing with him to do it with. He asked his wife to find him a hammer. The article was brought out, put in a teakettle over the fire, and after the water steamed and bubbled well, he lifted it out and gently touched his patient in a half-dozen spots, over the seat of pain, with very positive effect. Boiled hammers were for many years used in that neighbourhood for pleurisy; and every old lady knew nothing was equal to a hammer, and there was a long dispute whether it should be a claw-hammer or not. The yeas finally conquered.

PROGRESS OF AMERICAN REFINEMENT.

The *Pacific Medical and Surgical Journal* states that for many years past ladies have had no "legs" in polite society, and that the last case of kid-glove delicacy that has come to light is the punishment of a druggist, for sending a female syringe to a customer by mail, under the act prohibiting the sending of obscene articles by that conveyance.

The same journal suggests a new method of examining the abdominal organs without violating the injunction of the friends "not to open the body," namely, the introduction of the hand per rectum, and bringing away any parts within reach.

OBITUARY.

Ballard.—On the 1st September, Thomas Ballard, M.D., of Southwick Place, aged 56.

Bates.—On the 9th September, at his residence, No. 6 Stockport Road, Ardwick, Manchester, William Bates, M.D., F.R.C.S., aged 55.

Bowdage.—On the 6th September, at Wiveliscombe, Somerset, E. Bowdage, M.R.C.S., formerly of Crewkerne, aged 74.

Carte.—On the 10th September, at Somerset Street, Portman Square, Edward Elliott, elder son of John Elliott Carte, M.B., C.B., Inspector-General of Hospitals, in his 15th year.

Carter.—On the 14th September, at Wimpole Street, in his 11th year, after a lingering illness, Arthur Septimus Becher, the beloved son of Robert Brudenell Carter, F.R.C.S.

Cass.—On the 2nd September, Edward E. Cass, M.R.C.S.Eng., L.S.A. Lond., of Goole, aged 31.

Cutler.—On the 7th September, at New Burlington Street, London, Edward Cutler, F.R.C S., &c., aged 77.

Falconer.—On the 15th September, at St. Anne's, Lasswade, John Falconer, Surgeon, late of Loanhead, aged 67.

Gordon.—On the 8th September, at Heath Cottage, Charlestown, Aberlour, George Gordon, L.R.C.S.Edin., Surgeon R.N.

Hickson.—On the 6th September, at Mersey Road, Rock Ferry, Robt. Hickson, M.D., aged 82.

Higginson.—On the 20th September, at Donaghadee, the infant son of H. Talbot Higginson, M.D., L.R.C.S.I.

Hoadley.—On the 22nd April, at sea, on board the ship *Stonehouse*, Mary Anna, the beloved wife of Robert Hoadley, M.D., late of Auckland Lodge, Fulham. Also on the 6th May, their infant daughter.

King.—On the 12th September, Daniel King, M.R.C.S.Eng., of Bideford, aged 28.

Mackenzie.—On the 19th September, at Upper Woburn Place, P. M. Mackenzie, M.D., Member of the Legislative Council of the Island of Tobago, aged 53.

Murray.—On the 16th September, at Wickham, Hants, John Murray, M.A., M.D.

Paxton.—On the 10th August, on the homeward voyage from the Cape, William Albert Paxton, M.B., surgeon steamship *Adriatic*.

Robson.—On the 21st September, at Iver, Bucks, F. A. H. Robson, Esq., M.D., F.R.C.S.

Roe.—On the 17th September, J. R. Roe, L.R.C.P.Ed., of Bridgnorth, Salop.

Stokes.—On the 18th September, John F. Stokes, L.R.C.P.Ed., of Brook Road, Bootle, aged 26.

NOTICES.

THE DOCTOR is published Monthly, price Sixpence, and sold by all booksellers. It is also supplied by the Publishers named at the foot of the last page.

Subscribers paying in advance receive THE DOCTOR post free at the published price. Subscription may begin at any time, but must end in December. This is necessary on account of the multitude of small accounts.

Post-office orders or cheques to be made payab'e to Baillière, Tindall, and Cox, 20 King William street, Strand, London, W.C. Where it is difficult to obtain a Post-office order, postage stamps (HALF-PENNY ones preferred) may be sent. No form of subscription is necessary; an ordinary visiting card or name and address on paper, enclosed with the amount of subscription, will secure the regular transmission of THE DOCTOR as soon as published. The Subscription for the year, is 6s., post Free in the United Kingdom.

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THE DOCTOR.

LONDON, NOVEMBER 1, 1874.

Multum in parvo.

WHAT IS QUACKERY?

IT is not easy to find a definition of quackery at once comprehensive and exact. Unfortunately, various kinds of quackery are rampant. Alas! that it should be true; but there are quacks in high places in the profession.

THE DOCTOR has in its time exposed some of the worst forms of quackery, and we hope in future to do so more effectually.

With the enthusiasm of youth, the *Students' Journal* hopes to extirpate quackery by means of law, and has started a fund for the purpose. We wish success to young Physic in its crusade, and hope it will not take offence at what we are about to add.

We regard the use of secret medicines as unjustifiable, and we consider that to derive a profit from the sale of secret remedies is a very distinct kind of quackery. In fact, we look upon the term "secret medicines" as synonymous with "quack medicines," and the College of Physicians regards them in the same light.

We have always understood that the proprietors of "chlorodyne" asserted that they only were in possession of the knowledge of its composition—that they denied the exactitude of the analyses that have been published—nay, if our memory fail not—that they defied chemistry to detect their secret. We should be sorry to do injustice; but we have always understood that secrecy was claimed for the compound, though we have ourselves published a formula.

For that reason we have never prescribed chlorodyne, and hope many other Fellows of our College have never done so. It is true that members of the profession have used this and other secret compounds, but we consider that in so doing they are encouraging one form of quackery.

Nevertheless, we hope the practice is decreasing, and that when the students have made "*quacks another extinct race of beings*" they will grow up into doctors who never use secret medicines. We have been led into these remarks by the scheme of the *Students' Journal* embodied in the phrase just quoted and italicised by us, and by the singular fact that on the opposite page (295) we find the following among the leading articles of that periodical:—

CHLORODYNE.—The current number of the *Chemist and Druggist* contains an excellent portrait of Mr. Davenport, whose name is so well known in connection with chlorodyne. In the notice of Mr. Davenport, which accompanies the portrait, our contemporary says:—"Chlorodyne was a compound invented by Dr. J. Collis Browne, a surgeon in the Indian army, who brought it to England in the year 1856. We have heard it stated (it is only a rumour, and we do not guarantee its truth) that Dr. Browne offered his formula at that time, and all interest in its sale, for £100. However this may be, Mr. Davenport declined to purchase until he had satisfied himself of the value of the medicine, and we believe that ultimately an arrangement was come to which left to Dr. Browne a share in the profits. Mr. Davenport induced some surgeons to test the new medicine in several hospitals, and the results were so satisfactory that it was soon prominently introduced, first to the profession, and then to the public. There is no doubt about the value of this medicine. *It has forced itself into the prescriptions of men who, as a matter of etiquette and principle, hate secret remedies.* It has found its way all over the earth, and even in such countries as Germany, Russia, Norway, &c., where the patent medicine trade is comparatively unknown or forbidden, Collis Browne's chlorodyne is an almost invariable article of stock. This great success is due mainly, no doubt, to its merits, but also to some extent to the simple and straightforward manner in which it has been placed before the profession. It has been advertised, perhaps, in every printed language on earth, but there has never been anything like clap-trap or misrepresentation employed to aid its sale. Everyone must acknowledge that Mr. Davenport has set a bright and honourable example to those who would venture on the slippery paths of patent medicine working."

We have italicised a statement to which we invite the special attention of those who are preaching the new crusade against quackery, and we ask the students of to-day if they approve of secret medicines.

By a singular fatality, in turning over the number from which we have extracted the article on chlorodyne, we come upon a full page advertisement of that compound.

CHRONICLE.

ELASTIC LIGATURE IN FISTULA IN ANO.

DR. VENTURA ROMANA, of Triest (*Memorabilien*, Oct.), says that sometimes fistulæ are so high up that great loss of blood is caused by the ordinary operation by the bistoury, and many patients hate the knife above all things. A sound with an eye is passed up the fistula, and if there be no opening into the rectum the sound is pushed through and bent down to the anus; in the eye of the sound is threaded a drainage tube, which is drawn up through the fistula and then knotted twice or thrice tightly. This ligature falls in about a week, and the pain lasts only a few hours. When the ligature came away a well granulating wound remained, which closed quickly.

PUNCTURE OF KNEE-JOINT IN HYDRARTHROSIS.

Dr. Dieulafoy (*Memorabilien*, October, 1874) mentions twenty-two cases of fluid in the joints which were treated by Desprès sixty-five times by aspiration with no evil results. Some of the cases were cured in less than a week with one or three punctures, others in less than a fortnight with four or six; some in three weeks with many punctures. Desprès thinks, however, that ordinary treatment is quite as good in most acute cases, whilst in chronic cases of fluid in the joints aspiration is of great service. Other surgeons mention deaths as occurring from puncture.

INFLUENCE OF CHLOROFORM IN LABOUR ON THE FŒTUS.

Dr. Dubois says (*Memorabilien*, October) that when the mother is put under chloroform the fœtal heart is made more rapid. Dr. Zwefel, of Strasburg, gave chloroform for fifteen minutes to a patient, and she was confined two hours subsequently. The afterbirth had distinct reaction of chloroform in it. He also found chloroform in the urine of the child.

CHRONIC RHEUMATIC ARTHRITIS.

Dr. Moore, of Dublin, contributes to the July number of the *Medico-Chirurgical Review* a report on "Scandinavian Medicine." In speaking of the *Nordiskt Medicinskt Arkiv.*, he notices a paper on "Arthritis Deformans," by Professor Drachmann, of Copenhagen, which he thus sums up:—"The author considers the disease chiefly in its clinical and pathogenetic aspects. Five important questions require to be solved; they are—(1) What is arthritis deformans? (2) Its symptoms? (3) Its relations to gout and rheumatism? (4) Its etiology? (5) The means of treating it? He adopts Haggarth's definition: 'The disease is almost exclusively peculiar to the female sex; shows itself without fever; the accompanying swelling of the joints is always attended with swelling of the bones; the integuments are not inflamed, and the muscles appear not to suffer.' The author's experience is based upon observations of twenty-eight cases of the affection, all of which occurred in females. As regards the question of age, four of his patients were first attacked before they were twenty years old, six between the age of twenty and twenty-five, nine between twenty-five and forty, five between forty and fifty, and four later. One-third of the cases were in easy circumstances, including several in the highest ranks of life. The malady most frequently began in the small joints, especially of the hands. Thus, in eighteen instances, the point of origin was the finger, the hip in three, the elbow in one, the knee in two, the foot in one; several joints were simultaneously attacked in three. With regard to the chronicity of the disease, Professor Drachmann found a clinical history of under five years duration in six instances, of between five and ten years in eight, of from ten to twenty years in six, of from twenty to thirty years in seven, and of more than thirty years in one instance. He tabulates the predisposing or exciting causes of the disease as follows: Long continued over-exertion in twelve cases, cold and draughts in nine, damp dwellings in eight, sedentary life, in conjunction with cold, in three, menstrual disturbance in three, rheumatic fever in two, the grand climacteric in five. He remarks that occasionally the attacked joints, instead of undergoing ankylosis, gradually become so relaxed as to simulate the condition termed by the Germans schlottergelenke. One remarkable example of this is given: The Countess H——, aged forty-three, had suffered from arthritis deformans since she was eighteen. All the affected joints were so freely movable as to readily undergo subluxation. Böcher's observation as to the diminution of phosphoric acid in the urine, while it was quadrupled in the blood, of a victim to chronic arthritis, led Drachmann to analyse the urine in twenty of his patients, with the result of confirming Böcher's statement. The mean quantity of phosphoric acid excreted per diem in the urine of these twenty patients was 1.194 grammes. Neubauer gives the mean quantity for an adult male as 3.5 grammes, and Dr. G. Harley, for a healthy adult, as about 3.22 grammes (50 grains). Dr. Drachmann, in analysing the concretions so characteristic of chronic rhematic arthritis, found their chemical composition to be identical with that of bone, excepting a slight preponderance of lime. He lays stress on this as a point of differential diagnosis from gouty concretions, which so largely consist of urates. As illustrative, however, of the occasional difficulty of diagnosis, he adduces two cases of gout which very closely simulated chronic rheumatic arthritis. To rheumatism, on the contrary, the disease is so intimately related that the author is inclined to believe that it may be regarded as the more serious or malignant expression of the rheumatic diathesis. His experience of the results of treatment is not more favourable than that of the majority of writers on the subject. To colds, draughts, moisture, and over-exhaustion, as injurious elements, he adds absolute rest, and he suggests the warm, dry, and equable climate of Upper Egypt as likely to be of service to the unhappy sufferers from this intractable malady. Alas! how few of them could find the ways and means of carrying this advice into effect."

THE BLISTER TREATMENT OF RHEUMATISM.

Dr. T. R. Peacock has used the blister treatment, introduced by Dr. Davies, for acute rheumatism since 1865. He has a high opinion of it when vigorously applied. The blisters are generally made two or three inches wide, and long enough to encircle the limb. When they have risen, they are dressed with linseed meal poultices for several days. Usually, the patients do not complain of the blisters, nor is there any serious inconvenience from them; but as soon as the drawing is accomplished there is a marked amelioration in the swelling, pain, and constitutional disturbance. The cases most eligible for treatment by this means are those where several joints are involved, and the suffering and constitutional disturbance great. Three to six blisters are applied at once near the affected joints; they are repeated as exacerbations occur, and are applied to joints as they are successively involved.

Dr. Peacock agrees with Dr. Davies that this treatment often curtails the length of the disease and prevents internal complications. He regards the blisters as less depressing than the alkalis and other constitutional medication, except tonics, which he often gives.

RHEUMATISM OF THE TENDONS.

M. Peter, of the Hôpital St. Antoine, Paris, had a patient, aged thirty-five, who had been suffering for a few days from pain in the situation of the joints of the knees and ankles. No swelling or redness was to be observed in the painful situations; no general symptoms of rheumatism; no fever. The pain was aggravated when the finger was moved carefully along the head of the fibula, on the tibia, in the situation of the aponeurotic expansion of the tendons, and behind the malleoli. Movements of the articulations were painful, through the straining exerted on the inflamed tendons.

M. Peter has often observed such cases of rheumatic inflammation of the tendons and serous bursæ, unconnected with gonorrhœa. The pain is to be sought after, not with

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the hand, but with the finger, carefully exerting pressure on the situation of the tendons and bursæ, for example, behind the ankles, between the biceps and head of the fibula, above the aponeurotic expansion of the knee, behind the calcaneum and the olecranon, in front of the patella, in the situation of the great trrochanter, &c. The disease is really an extenuated form of rheumatism, and constitutes rheumatic synovitis. It rarely presents cardiac complications. It is seldom accompanied by any great fever, though sometimes the fever may be somewhat high, and the evening temperature may rise to 39° or 40° cent., say 101° to 104° Fahr. There may be some œdema in the situation of the inflamed tendons. The surface may also be discoloured. It is much milder than articular rheumatism, and does not require energetic treatment.

LEUCOCYTHEMIA.

The following case, from the clinic of Prof. Da Costa, of Jefferson Medical College, and recorded in the *Phil. Med. and Surg. Rep.*, will be read with interest :—

Emma S., æt. 40. The first thing that strikes your attention is her extreme paleness, and next a large abdominal tumour, which has been proved to be, on a former occasion, an enormously enlarged spleen. It seems to be a fibroid or hypertrophied condition of the organ. In this case there has been a complete absence of fever. She complains of some headache and some deafness, and although she has been for some time in the hospital, has not been improved in strength. Her pulse is 72; tongue is clean; bowels are constipated, and are not relieved, unless by medicines. Her appetite is less capricious than hitherto. When she first came to the hospital, her hunger was insatiable. She thinks she is hungry as she used to be, but the nurses do not think so, and we are inclined rather to the latter opinion. Her blood has been most carefully examined under the microscope. A drop of blood was taken from the middle finger, and five observations were made, which are as follows :—

1st	observation,	red corpuscles,	68	to white	60
2nd	,,	,,	121	,,	48
3rd	,,	,,	124	,,	34
4th	,,	,,	88	,,	55
5th	,,	,,	128	,,	54
		Total - -	529	,,	251

This, as you see, is a very abnormal state of affairs, the proportion of the red corpuscles to the white being about two to one, while in health, as you are aware, there is one white to about four hundred red.

Diagnosis.—Leucocythemia, or white cell blood, a disease in which we find the blood-glands affected, and very often the lymphatic glands too, which is not so in this case, this being pure splenic leukemia. Why does she feel that enormous or ravenous appetite? It is due to the white-corpuscular condition of the blood. Gastro-intestinal disorder is very common in this disease.

The next question that arises is: What shall be our treatment? Under the use of ergotine hypodermically, the abdominal tumour has been diminished, but owing to the irritating effect of this substance, we have been compelled to discontinue its use, therefore the cure has not been complete. We will now commence the use of iodine hypodermically, the preparation of which is according to the following formula:—

℞ Iodinii, gr. xxiv.;
Glycerinii, fl. ʒxij.;
Aquæ, fl. ʒvj. M.

Sig.—From ten to twelve minims injected hypodermically every day.

She is also taking the mineral acids, and although she cannot tolerate the use of iron very well, we will try it by inhalations :—

℞ Tart. of iron and potass., gr. ij.;
Aquæ, fl. ℥j. M.

Sig.—To be used with the atomiser.

DIABETES MELLITUS.

Dr. J. B. Hoag, of Callao, Ind., declares, in *The Journal of Materia Medica*, that this disease can be permanently cured in the following way :—

The first thing we do, is to interdict the use of all kinds of fruit or vegetables as food, and anything of a vegetable character save bread made of unbolted wheat flour in as small quantities as can be got along with. I also forbid tea and coffee, in fact all drinks except pure water, or lime water diluted with milk, which may be taken sparingly at meals. The diet must be restricted to fresh meats (salt meats being inadmissible on account of their liability to provoke thirst), cream, cheese, butter, soft boiled eggs, fish and oysters, with, as before remarked, small quantities of Graham bread, but the less of this last the better.

The treatment in connection with the observance of the above rules of diet, and sponging the entire body daily with an alkaline bath, which I have found most successful—which in fact has never disappointed me, when the patient observed proper diabetic rules, is as follows, viz. :

℞ Antimonii sulph. precip., ℈i.
Pulv. Doveri, ℈ij.;
Carb. ammoniæ, ʒi.;
Pulv. opii, gr. x. M.
Fiat in chart. no. 20.

One to be taken morning and night. Also

℞ Tinct. cinchon., ℥ij.;
Mur. tr. ferri, ʒiv.;
Tinct. digitalis, ʒi.;
Spts. lav. co., ℥i. M.
Dose, a teaspoonful at noon.

THE USE OF LARGE INJECTIONS OF WATER FOR INTESTINAL OBSTRUCTION.

After quoting from authors advocating large injections of water for intestinal obstruction, and from his own previous writings to the same purpose, Dr. Robert Battey (*Atlanta Med. and Surg. Jour.*) advances the theory, which he claims as original, that fluid can be not only forced through the ileo-cæcal valve into the small intestine, but that it may be forced through the whole length of the alimentary canal and out of the mouth. Two cases are reported where this took place, the quantity of tepid water used being in each case little less than twenty-four pints. In one case, turpentine soap was mixed with the water, and the patient protested she could taste the soap in the clear fluid vomited as the injection was being passed. He had, with Prof. Johnson, experimented on the cadaver by injecting cold water into the rectum. "It found no obstacle to its onward progress at the ileo-cæcal valve; it passed easily through the small intestines, stomach and œsophagus and out of the mouth."

He gives the large injections advised with a syringe that throws a continuous stream—it being operated slowly. He would have air carefully excluded from the water, believing that air tends to induce sudden discharge of the fluid; and when pain is produced by the injection, he gives anodynes—opium or chloroform, and if necessary he anæsthetises the patient. He holds this to be altogether the most proper of all means of relief for the various obstructions of the intestines, and hopes to see it supersede the use of the knife in most cases of strangulated hernia.

Insisting that *very large* quantities of water may be injected, and to a point far beyond the ileo-cæcal valve, *without harm*, he combats the doctrine of Dr. Flint, sen., and others, that large injections of water, when pain is produced, are hazardous, and are to be used with great caution.

TEMPERATURE OF HEART AND LUNGS.

Albert and **Stricker** (Stricker's *Jahrbucher*, 1873) offer a serious objection to the usual mode of determining the temperature of the heart—that the thermometer is in contact both with the muscular tissue and with the blood, for they find considerable difference between the two.

A thermometer introduced through the diaphragm, and imbedded in the substance of the left ventricle, showed a temperature of 0·5° to 0·7° cent., or more than a degree Fahr. higher than another introduced into the cavity of the ventricle through the auricular wall. There was little difference (one-tenth of a degree centigrade) between the blood in the left ventricle and that in the aorta, which was the lower of the two. Further experiments showed that the blood of the right auricle is warmer than that of the superior vena cava, and that in the ventricle the temperature is higher as the apex is approximated, probably owing to the admixture of the blood of the coronary vein, which has circulated through the warm muscular tissue of the heart. They are of opinion that there is decided refrigeration of the blood as it passes through the lungs, though the heat lost is small, and is partly compensated for and restored by the higher temperature of the walls of the left ventricle. The blood of the aorta is warmer than that of the vena cava descendens.

ABNORMALITIES OF THE PULSE.

Dr. George Balfour, in a clinical lecture on diseases of the heart, in the *Edinburgh Medical Journal*, says :—

"In further examining the condition of our patient, we first feel both radial pulses simultaneously, noting whether the arteries are firmer or more tortuous than usual (atheroma). If there be a marked difference between the two radial arteries, we feel both brachials simultaneously ; if these be equal, the difference between the two radial arteries is due to irregular distribution. If the brachials differ, in all probability there is some abnormal physical cause to account for it—possibly an aneurism. Should the radial pulses be equal and regular, but small and feeble, we elevate the wrist to a level with the head, if the patient be sitting or standing ; if lying, we elevate the arm to its full length perpendicularly to the body. Should the pulse then become extinguished, or nearly so, the patient is anæmic, and possibly anæmia is his sole disease ; but we must never, under any circumstances, rely on one symptom, however apparently trustworthy, but merely note it as an aid and a guide in our further investigation. Should the pulse, after elevation of the arm, remain still small and feeble, but distinct, the cardiac disease, if present, is mitral. Irregularity of the pulse confirms this suspicion ; extreme irregularity points to the probability of the affection of the mital valve being constriction rather than dilatation. Should the small, feeble, and possibly irregular pulse remain not only distinct after the elevation of the arm, but become more so, the systolic impulse being followed by such a sudden and complete collapse as to render the impulse apparently more marked, then we have to do with a double lesion, a mitral and also an aortic regurgitation. This form of pulse is, however, not always well marked, in many cases is not easy of detection, and is therefore not to be relied upon, unless the collapse is distinct. In simple aortic regurgitation, however, the peculiar sensation conveyed to the finger and well-known by the terms hammer, or Corrigan's pulse, is usually well-marked, and frequently so greatly increased by elevation of the arm as to become almost painful, and wholly unmistakable."

THE DEEP INJECTION OF CHLOROFORM FOR THE RELIEF OF TIC DOULOUREUX.

Dr. Bartholow, Professor of the Practice of Medicine in the Medical College of Ohio, publishes a paper on this subject in the *Practitioner*. Last year, he gave an account in the *Clinic* (Cincinnati) of three cases of tic douloureux which he had treated by the deep injection of chloroform. In two of the instances the pain was remarkably alleviated. He does not claim that this new therapeutical expedient is uniformly successful ; yet he has frequently seen great relief afforded by its employment. He says : "By the deep injection of chloroform is meant the insertion of the needle of the hypodermic syringe deeply into the tissues, and the injection of the chloroform into the neighbourhood of the nerve trunk, the peripheral distribution of which is the seat of the pain. In the cases which have been reported the infra-orbital branch of the nerve has been the seat of the tic. In these cases the operation consists in passing the needle under the upper lip in the direction of and near to the infra-orbital foramen, and then injecting from ten to twenty minims of pure chloroform. Very considerable pain is experienced at the moment of the injection, and for a few minutes subsequently ; but this presently subsides, and is succeeded by a feeling of numbness and of anæsthesia of the parts into which the chloroform diffuses. A puffy swelling quickly forms at the site of the injection, and an induration, which remains for several days, follows. The numbness of the lip and cheek continues for a variable period—for a week or more. Systemic sensations, such as giddiness and soper, due to the diffusion of the chloroform into the blood, are soon experienced ; but these effects may be scarcely perceptible, and are never alarming. Indeed, the results, so far as systemic effects are concerned, may be regarded as absolutely free from danger. So much swelling and induration occurring at the site of the injection must occasion apprehension of the formation of an abscess. Although it would be rash to deny the probability of such an untoward occurrence, yet this accident has not thus far happened in any of the reported cases of the deep injection of chloroform. In order to ascertain more satisfactorily than I could from an examination of the patients the degree of suffering which attends the injection, and the extent and duration of the resulting numbness, I practised an experiment on myself, by inserting fifteen minims of Squibb's chloroform under the skin of the calf of the leg. The pain was by no means so severe as I had anticipated, and, indeed, could easily be borne. Considerable swelling resulted, and an induration as large as a filbert continued for two weeks, when it disappeared without suppuration. Immediately after the injection, numbness was experienced about the site of the injection ; but it then extended downwards, and on the following day had reached to the bottom of the foot. A space, in which the sense of touch and the appreciation of temperature and pain were markedly diminished, existed from the point at which the chloroform was inserted to the hollow of the foot, although somewhat irregular in shape, at least two inches in transverse diameter at any point. This numbness and insensibility continued for three months, and could then be ascertained to exist by directing the attention to the part. It is obvious that chloroform injected into a part modifies the power of the nerves to conduct impressions to the sensorium. When it is injected into the deeper parts of the face, it comes into relation to vessels having an intimate connection with the intracranial circulation. As is, of course, perfectly well known, the facial vein communicates with the pterygoid plexus and the cavernous sinus. In addition to the local benumbing effect, chloroform injected for the relief of tic douloureux must quickly act on the centres of conscious impressions. As pain means, in the ordinary cases of neuralgia of the fifth, at least an irritation of the nerve trunk, the perception by consciousness of this impression, and its reference outwardly to the peripheral distribution, we may assume that chloroform causes an interference or interruption at several points of the circuit." As long ago as January last the *Birmingham Medical Review* quoted a paragraph from the *Bulletin de Thérapeutique*, describing the employment of the *submucous* injection of chloroform. Dr. Dop, a French physician, has spoken highly of the great relief which may be given by this procedure in cases of severe toothache. He used a hypodermic syringe with a slender needle, making the puncture in the gum as near as possible to the fangs of the affected tooth. He found that chloroform afforded immediate relief from pain in the majority of cases, and that its good effects lasted from three to five hours.

THE EFFECT OF FOOD ON THE BONES.

From a series of investigations carried on upon goats, H. Weiske and E. Wildt (*Zeitschrift für Biologie*, Band ix., Heft iv.) conclude that, although the withdrawal of lime or of phosphoric acid from the food of adult animals leads to fatal consequences, it has little or no influence on the composition of bones. They declared it does not make the bones friable. One kid was fed upon food poor in phosphoric acid, a second on food poor in lime, and a third on normal diet. After the lapse of fifty-five days various bones were analysed, and the general result was, that just as in adults so in young animals: no remarkable change was produced in the composition of the bones by the difference in the diet, but that the composition of the bones is independent of the nature of the food. It is however, admitted that the bones were stunted in their growth.

SALIVARY CALCULUS.

The *British Journal of Dental Science* for September opens with a paper by S. James A. Salter, Esq., M.B., F.R.S., detailing some investigations relative to salivary calculus, in which he was assisted by Dr. Stevenson, who analysed several specimens for him.

We are told that salivary calculus exists in two distinct conditions—as *Tartar* on the teeth, and *Stones* within the ducts of the salivary glands. Tartar differs a good deal in different specimens as to its physical and somewhat as to chemical characters. It is deposited from the compound fluids of the mouth, and it has, entangled in it, a certain amount of extraneous matter, such as shed epithelium and a notable quantity of the fibres of the mouth-fungus, *Leptothrix buccalis.*

The calcareous *stones* that are found in the salivary ducts are necessarily the produce alone of the secretion of the glands in whose ducts they are formed.

Between tartar, in its several varieties, and the duct-stones there appears to be one constant chemical difference, namely, that the latter contain a much larger amount of *carbonate* of lime.

Dr. Stevenson's analyses of tartar have been made with mixed specimens, soft tartar taken from molar teeth, and hard masses removed from the lower incisors.

MIXED SPECIMENS.

Phosphoric acid	29·72
Lime	35·70
Magnesia	6·22
Organic matter	20·27
Water	7·33
Carbonic acid, a trace.	
	99·24

SOFT TARTAR FROM MOLARS.

Phosphate of lime, with a little carbonate and a trace of fluoride	77·21
Phosphate of magnesia	1·31
Organic matter	16·33
Water	5·15
	100·00

HARD TARTAR FROM LOWER INCISORS.

Phosphate of lime, with a little carbonate and some fluoride	81·18
Phosphate of magnesia	1·31
Organic matter and water	17·51
	100·00

Mr. S. believes a considerable portion of the organic matter in tartar consists of Leptothric fibres that have become encrusted and covered in by the calcareous deposit, and thinks it highly probable that the meshes of the fungus fibres may contribute to and facilitate the deposition and solidification of the lime salts.

If tartar is dissolved by hydrochloric acid numbers of minute threads are seen remaining when the specimen is examined by high powers of the microscope. Finding these so persistently resisted the solvent action of chemical reagents, Mr. S. was disposed to think they were silicic in their nature. Dr. Stevenson, however, failed to discover a trace of silex in any of the specimens he analysed.

It is said that the tartar formed on the molar teeth and supposed to be derived by the parotid glands contains more carbonate of lime than that deposited elsewhere. Dr. Stevenson's analyses did not bear out this idea.

The salivary duct-stones contain much more carbonate of lime than the tartar on the teeth.

Some years ago Dr. Taylor, of Guy's Hospital, analysed several of these concretions, and the following was the general result of a number of museum specimens, without distinctions as to the glands that furnished them:—

Animal matter	25
Phosphate of lime	55
Carbonate of lime	15
Carbonate of magnesia	1
Oxide of iron	2
Loss	2
	100

The fact that the calculi were probably derived from different glands might be presumed to rob the analysis of much of its interest, as the secretion of the different salivary glands is not the same. Dr. Taylor, however, analysed one large duct calculus, which certainly came from the sub-maxillary gland, and with nearly the same results, as shown below:—

Animal matter, salivary mucus containing nitrogen and sulphur	32·00
Phosphate of lime, with traces of phosphate of magnesia	54·40
Carbonate of lime	13·60
	100·00

STRUCTURE OF THE THYROID GLAND.

It was some time since stated in the *Lancet* that in a pamphlet recently published by M. S. A. Boéchat some novel views of the structure of the thyroid are advanced. M. Boéchat hardens the gland in picric acid, then transfers it for a few days to a solution of gum, and finally immerses it in alcohol. In opposition to previous writers, he maintains that the alveoli intercommunicate freely, and that they are not round, but irregularly-shaped cavities. The walls of the vesicles are formed by a single layer of epithelial cells, which separate the vesicles from the lymphatic sinuses, that are here very large and numerous. The individual epithelial cells are broader than high, and are not, therefore, as Verson described them, columnar in form. In childhood the vesicles contain a viscous fluid, with a variable number of granulations. In later life they are filled with colloid substance. The latter stains deeply with anilin red and carmine. Boéchat agrees with Virchow in believing that the colloid substance is not produced at the cost of the epithelial cells, since these can be often found forming a perfect layer in alveoli filled with the colloid substance. The lymphatic sinuses constitute a wide cavernous plexus, distributed through the connective-tissue stroma of the gland.

IS HYDROPHOBIA CAUSED BY THE BITES OF DOGS?

Dr. Hy. Muscroft relates in the *Lancet* (Oct. 10) two cases of hydrophobia caused by the bites of dogs not recognised as rabid, and which to many may suggest the doubt so often expressed as to the origin of the disease.

Dr. Muscroft says: It will be seen at a glance that the symptoms had not their origin in that condition arising from fear of the effects of a dog-bite, as described by Dr. Fayrer; as, in one case, the man had even forgotten the circumstance, and in the other he was only reminded of it several weeks afterwards, when pain in the part directed his attention to the cicatrix. As both the dogs, in the cases just described, were apparently healthy, we are driven to the conclusion that a dog may occasionally communicate hydrophobia when not apparently suffering from rabies or any recognisable disease whatever.

Whether there may be some especially noxious peculiarity in the saliva of these animals at times, may be a matter worthy of the attention of pathologists. To many it would seem more likely that in certain individuals, whether from being the subjects of a latent *materies morbi*, or of some hidden or unknown idiosyncrasy of temperament or organisation, hydrophobia may occasionally be developed if the saliva of a dog, apparently healthy, be brought in contact with a wound. The saliva of a rabid dog is, doubtless, much more dangerous; but the saliva of some dogs, not rabid, is not free from danger. The above argument, perhaps, is strengthened by the fact of so many escaping after having been bitten by rabid animals; for if peculiarity of constitution be not a principal factor in the production of the disease, upon what hypothesis can the escape of the large majority of those who have been bitten be explained?

Dr. Muscroft asks whether, as regards the treatment of hydrophobia, it is not possible that atropine, if more courageously administered or injected than hitherto, would be capable of benefit? By its known action on the pneumogastric, it should be beneficial; and scarcely less so if its action in congestion of the spinal cord or its membranes be as successful as indicated by Dr. Brown-Séquard.

In the history cases the following fact is related by Dr. Ginders, whose case it was. Dr. G., having described a spasm which he witnessed, says: "I struck him with my clenched fist between the shoulders, which relieved him at once, and in all his spasms which I witnessed subsequently this proved the most efficacious remedy."

Mr. Fleming combats with great force the notion that the disease can be produced by the bite of a healthy dog, and quotes the experience of Professor Pillwax, of the Imperial Veterinary Institute of Vienna: "In 1862, when rabies appeared as an epizooty at Vienna, 552 dogs were brought for examination to the Institute, and all these, with the exception of 32, were found to be free from this disease; among the remaining 490 were only a few cases of mange and epilepsy. Yet the official report stated that the majority of these dogs had bitten people, and, notwithstanding, not one of those who had been wounded by the 490 non-rabid dogs died of hydrophobia. During the whole period only one individual (a boy), who had been bitten in the face by a dog suffering from furious rabies, was attacked by the disease on the twenty-fourth day, and died in three days. 'Since the year 1848,' says the professor, 'during which period I have had to examine suspected and really rabid animals, 300 and 400 dogs have been brought annually to the Veterinary Institute because they had bitten people. Until the state of their health was ascertained, these dogs were regarded as suspected by the authorities; and although their number now amounts to more than 5000, yet not one of the persons so injured by them has had hydrophobia.' If the bite of a non-rabid dog is capable of inducing hydrophobia, surely a large number of these people must have perished."

BUCCAL PSORIASIS.

Dr. Debove contributes to the *Archives Générales* a memoir on this affection, which is epitomised by the *Phil. Med. Times.* Dr. Debove does not consider the disease identical with psoriasis as usually found upon the skin, though he retains the name, as more descriptive than that of ichthyosis given by English authors. The appearance of the disease is as follows:—It presents itself at first in the form of isolated patches so small as to pass unnoticed. These gradually enlarge, however, and assume an opaline transparent appearance. The epidermic layer of the tongue grows thinner and allows the mucous layer to become apparent; gradually the patch become opaque. If these changed portions of the surface of the tongue are now examined with a lens, the papillæ are seen to be enlarged and frequently massed together with epithelial collections.

The usual form of the eruption is that of a V-shaped median patch, situated at the junction of the middle and anterior third of the dorsum linguæ; it may spread, however, over the whole upper surface, and occasionally to a less degree over the inferior parts. When the disease is well-developed, the surface of the tongue feels hard and resistant, and occasionally this induration is so marked over certain circumscribed portions as to embarrass the diagnosis materially. A frequent concomitant or sequel to psoriasis in this locality is cancroid.

As to the diagnosis, it is, M. Debove thinks, not difficult. Should the tongue have been irritated by applications, it may be mistaken for eczema. In this case, careful observation, without treatment, will show the characteristic patches taking once more the place of the artificially-created ulcerations. From indurated chancre the eruption is to be distinguished by the much less marked character of the induration, and by its not being accompanied by those glandular enlargements usually found in connection with lingual chancre. Mucous patches are decidedly different in their appearance from buccal psoriasis. Their surface is covered with the tenacious products of secretion, which, while they have a similar opaline appearance, yet, when the secretion is scraped off, look quite unlike the epithelial covering of the psoriatic patches.

As regards treatment, M. Debove directs total disuse of tobacco in any form, which he regards as having a certain influence towards the development of cancroid upon the psoriasis. Besides this, he advises alkaline washes and the spray of alkaline mineral waters, as well as their internal use.

HYPODERMIC USE OF QUININE.

In the last number of The Doctor we recorded the experience of Dr. Lente with this remedy.

Dr. Stephen Rogers, in a communication to the *New York Medical Journal*, considers that the hypodermic use of quinine is a dangerous operation, rarely justifiable, for the following reasons:—

1st. The hypodermic method of giving quinine involves a surgical operation of considerable discomfort, pain, &c., and hence should not be employed unless circumstances render it indispensable.

2nd. The operation is liable to be followed by severe local inflammation, abscess, and possibly tetanus.

3rd. It is very easy to avoid these pains, discomforts, and dangers, without in the slightest degree lessening the chances of recovery.

4th. The risk connected with the hypodermic method is not at all necessary, for the available means to accomplish the results which that method claims are abundant, and in no respect less liable or more expensive.

In the new number (October) of the same journal Dr. Lente, in replying to Dr. Rogers, declares that in the last 200 cases he has met with no inconvenience beyond slight temporary soreness. He, however, condemns too strong a solution. Some employ one with much more acid than Dr. Lente, whose mode of preparation for solution is as follows: ℞. Quiniæ disulphatis, grs. cccc.; acid. sulphuric., ♏xxxij. Rub up the quinine and acid, which latter should be evenly distributed over the quinine, *very thoroughly*, until the two are *intimately* and *uniformly incorporated together*, if it requires an hour. Place in a porcelain dish, over a spirit-lamp, add distilled water fl. ℥viij, stir with a wooden spatula until the solution becomes clear. Filter through paper into a bottle, and add: ℞ Acid. carbolic. liq., alcohol., āā ♏xvj. This solution should remain clear, and free from crystallization, at ordinary temperatures, for any length of time.

A CASE OF HERNIA.

At the New York Pathological Society Dr. Mason called attention to a case of hernia which occurred in the Charity

Hospital. A woman, æt. 60, was admitted for erysipelas of the leg and foot. Three days after admission she complained of pain in the abdomen, and vomited considerably, after which the attention of the house-surgeon was called to two tumours in the groin, which were diagnosed as hernia. One was situated on the right side and easily reducible, but the other, on the left side, was irreducible by taxis; ice was next applied, and allowed to remain all night, and in the morning the symptoms were subdued and the vomiting relieved; a slight movement of the bowels had also taken place. The tumour was then regarded as an incarcerated hernia, though not strangulated. There was not any unfavourable symptom for three days, when fluctuation over the tumour was observed, and a hypodermic syringe introduced and some glutinous serum drawn off. Two days afterwards all the symptoms of strangulation suddenly appeared; but an operation was steadily refused by the patient. With the aid of an aspirator a considerable quantity of fæcal fluid was drawn off; she, however, gradually sank, and died on the sixth day after strangulation occurred.

At the autopsy it was found that the sac had sloughed entirely away, and an inch of intestine had also sloughed off, leaving the canal open at two points, and a large abscess had formed directly below the sac.

Dr. Mason said that it was extremely rare to find an original hernia in a female occurring for the first time after fifty-seven years of age, and when the sac sloughed it rarely happened that the integument did not at once slough off and allow the discharge of fæces from that point. He had seen two or three instances of this in which the patients had done well. Dr. Mason also thought ice an extremely valuable help in reducing hernia, but dangerous unless watched.

TOPICS OF THE TIME.

PREVENTION AND TREATMENT OF PUERPERAL DISEASES.

Dr. Wm. Goodell, in an American Supplement to the *Obstetrical Journal*, treats of this subject in so practical a manner, and it interests so large a number of our readers, that we are induced to give currency to his views on this side the Atlantic. The arrangements of the Preston Retreat will be studied by the medical officers of other institutions. Dr. Goodell thus speaks of them :—

The wards are used invariably in rotation. By close management, and by crowding walking patients together, one of these wards in its turn stands idle for two or three weeks. During this time the doors and windows are kept open. Before it is again occupied by patients, the walls, floor, wood-work, and furniture, all of which are painted, are thoroughly scrubbed with carbolic acid soap, and then mopped over with a solution of half a pint of carbolic acid (Calvert's No. 4) to one pail of water. From this time until the ward is again vacated, no portion of it, not even the floor, unless accidentally soiled, is touched with water.

The nurses wear such clothing only as can be washed. As soon as the inmates of a ward are well enough to take care of themselves or of one another, their nurse is relieved from duty. She now takes a soap bath, puts on an entirely clean suit of clothes, and goes into a ward which has been thoroughly ventilated and cleansed. Before a new batch of patients falls to her care, she has had one week or more of rest. I visit the wards thrice daily, beginning always with the ward last occupied, and with the patient last delivered. Whenever a vaginal examination is needed, it is put off until all the other patients have been seen. The examining finger is then anointed with an ointment containing carbolic acid, and the hands are afterwards washed with carbolic acid soap. Post-mortem examinations I never perform.

The beds consist of a tick filled with fresh straw and covered with an army blanket. After the discharge of a patient, her bed is emptied, and the tick, blanket, and bed-clothes are boiled in water to which a little carbolic acid has been added. Each bed is furnished with a feather bolster and pillow, which are exposed on slats to the air when not in use. Once a year every bolster and pillow-tick in the house is washed, and the feathers baked and "renovated," as it is technically termed. They also pass through the same process whenever soiled, or whenever used by a patient whose convalescence has been delayed.

The patients come chiefly from the poorer classes; but many in more comfortable circumstances, with the hope of getting better care, seek admission on account of some difficulty attending their former labours. On this account, the proportion of difficult labours is much above the average. Those patients who have families often put off coming until labour has actually begun, and then leave at the earliest possible moment. Notwithstanding this, since patients have the privilege of remaining four weeks after their delivery, the average stay of each one is sixteen days before delivery, and eighteen days after. Every patient, upon admisssion, takes a warm bath, and at least one a week thereafter before her delivery. If she exhibits signs of feeble health, she is at once put upon the use of quinia, and of the house mixture, consisting of two parts of the muriated tincture of iron with three of dilute phosphoric acid. The habitual constipation of pregnancy is met by the administration, either in the morning, of a teaspoonful of pulv. glycyrrhizæ comp. of the Prussian Pharmacopœia; or, at bedtime, of four Lady Webster's pills (pil. stomachicæ). When a more active purge is needed, the pulv. jalapæ comp., or the pil. cathartic. comp. (U.S.P.) is given. Headache and sleeplessness are treated by warm baths, by full doses of potassic bromide, and by the above-named medicines, when indicated; albuminuria is dealt with in pretty much the same way, but always with iron and phosphoric acid. The regular diet is plain and wholesome, yet more liberal than usual in charitable institutions. Apart from the frequent use of aperients, a relaxed condition of the bowels is promoted by serving table syrups at every meal, by fruits fresh or dried, according to the season, and by all such vegetables as can be eaten—viz., lettuce, cress, radishes, leeks, onions, tomatoes, cucumbers, and cabbages. Of these, in this latitude, an ample suppiy is obtainable during nine months of the year.

When a patient falls into labour, she first has her bowels moved by an injection, and then takes a warm bath. The bag of waters is usually ruptured artificially, and the liquor amnii collected in a grocer's scoop. The second stage of labour is never allowed to linger; any delay is met by the use, either of the vectis or of the forceps. As soon as possible after the birth and removal of the child, the placenta is delivered by Credé's method. I may here remark that the still pulsating cord is first cut, then "stripped" of its blood, and as much as possible of its gelatin, and finally tied, when it has ceased to bleed, and has become flaccid. Neither belly-band nor any kind of dressing is afterwards applied, but the cord freely dangles about from the navel. Treated in this manner, it dries up without any bad smell, and falls off like a ripe fruit, without leaving a raw stump. Out of more than five hundred infants treated thus, not one has had a pouting or sore naval requiring treatment, and not one has had an umbilical hernia. I am also well satisfied that, by dispensing with the belly-band, I have had fewer cases of inguinal hernia.

Ergot is hardly ever resorted to as an oxytotic; but one teaspoonful of the fluid extract is invariably given as soon as the head presses upon the perinæum. When the labour is over, the perinæum is examined, and, if torn, is at once sewed up with silver sutures. The patient is now washed clean, and a binder and cylindrical compress applied, the latter in the hollow just beyond the fundus of the womb. The bedstead on which she has been delivered is next wheeled from the Delivery Room to a ward and placed along the side of a bed, to which the woman now hitches herself over. Contrary to the generally held opinion that absolute rest after labour is indispensable, in no single instance has this muscular exertion apparently brought about a flooding. It seems rather to condense still further the uterine globe. Very rarely, indeed, has a flooding happened outside of the Delivery Room. However warm the weather, a blanket is thrown over the patient, and a foot warmer put to her feet. These remain until reaction sets in, and she asks to have them removed. A mug of beef-tea made from Liebig's extract is now given, and the child put to the breast as soon as it will take it. Thereafter, in a natural convalescence, the woman gets tea, boiled eggs, bread and butter for breakfast; potatoes, and some kind of meat for dinner; stewed or fresh fruits, tea, bread and butter for supper. On the morning following the day of her labour, the binder is removed for good, and she slips into a chair while her bed is making. This is repeated once or twice a day until the fourth or fifth day, when she, if so disposed, gets up and dresses herself. No patient quits her bed against her will; yet the force of example is so great, that very few care to stay in bed when they see their companions up and about.

No woman is allowed to suffer from after-pains. Whenever these are complained of, one-quarter grain doses of morphia are administered every hour until relief is obtained. In stubborn cases of after-pains I have found nothing act so promptly as the exhibition of ten grains of quinia every six hours, until the ears ring. Bed-pans are not employed, except in cases of illness, or in cases requiring vaginal injections; but each woman has her own chamber-pot, which she uses indifferently, either in the sitting or the knee-elbow posture. Every woman is required to wash her own person at least once a day, and that with carbolic acid soap and a wad of fine oakum, which is at once thrown away. Only under very exceptional circumstances does the nurse cleanse the patient. Should the lochia become offensive, the woman is made to get out of bed and slip in a chair three or four times a day. This usually corrects the fœtor; but if it does not, then and only then is a solution of potassic permanganate thrown up into the vagina. Firmly believing the nozzle of a syringe to be the medium of virus communication from patient to patient, I avoid the use of vaginal injections as much as possible. For a like reason, the temperature thermometer is not habitually used, but only in single cases as an aid to diagnosis.

Whenever the lochia are offensive, or the pulse is over 90, or the thermometer indicates a temperature higher than natural, or pelvic pains are complained of, or, in short, wherever any untoward symptom appears, quinia is given in from six to ten-grain doses every four hours, until the ears ring. In addition, for abdominal pains large doses of morphia are given, and the whole belly is painted with iodine, and covered with a mush poultice. The canonical purge on the third day is dispensed with. A patient has usually a movement of the bowels either before or on the day in which she gets up for good. If this does not happen she takes four Lady Webster's pills at bedtime, which then act on the morning of the sixth day. As soon after getting up as she feels strong enough, she takes a warm bath.

But few words are needed to explain why the ordinary chamber-pots are used, and why patients are made, once or twice a day after the first, to get out of bed and slip into a chair. The presence of putrescent fluids in the utero-vaginal tract is recognised by all writers as the great cause of the autogenetic variety of puerperal disorders. But the recumbent posture of itself necessarily tends to detain these poisonous discharges in contact with the traumatic lesions of labour. These discharges may also be partly imprisoned in the vagina through the swollen condition of the more external soft parts, or partly corked up in the uterine cavity by the presence in the cervical canal of a putrid clot. In such cases detergent vaginal injections are highly recommended. But clinically they will be found of limited value; for they cannot reach high enough, and do not ordinarily dislodge a large clot even when situated low down. True, intra-uterine injections are not open to one of these objections; but, apart from their being attended at best with some degree of hazard to the patient, the operation is too delicate a one to be entrusted to a nurse. Besides, in hospital practice, the nozzle of a syringe, to say nothing of the fingers of a nurse, is, I fear, so often one of the vehicles for the transmission of virus, as to make this means of disinfection of doubtful propriety. In a local outbreak of fever, especially of the diphtheritic form, I should, however, suggest the use, immediately after labour, of vaginal injections containing the nitrate of silver or the persulphate of iron, in quantities large enough to sear over the traumatic lesions of labour. Such injections I have had no occasion to try, but they ought to inhibit active absorption and promote healthy granulation.

While seeking a substitute for the syringe my attention was directed to the fact that the act of sitting on the ordinary chamber-pot often forced out putrid shreds or fœtid clots which had not been washed away by vaginal injections. This led me to discard, except in cases of positive illness, the use of bed-pans or of any other utensil, such as urinals, which can be used by a woman when lying on her back. Shortly after making this change, I found that, for like reasons, some shrewd and very practical writers of the last and the present century urged an early departure from the recumbent posture. Further, a residence of some years in the East had taught me that Oriental women, at least, can with impunity get up and be about a few hours after delivery. Influenced by these facts, I decided, cautiously at first, to introduce into the wards of the Retreat a system of puerperal gymnastics, consisting in no restraint whatever as regards the position in bed, and in the daily release from an irksome confinement. I was much pleased to find that the muscular exertion needed for these movements, so far from inducing hæmorrhage, excited the womb to contraction, and emptied it and the vagina of their putrid contents. I can testify that whenever the lochia are offensive, these upright positions, repeated several times a day, are excellent deodorants, better, in fact, than any detergent vaginal injections. There is yet another advantage gained by this plan; it affords in hospital practice an excellent opportunity for bundling the bed and bedding out of the ward, and giving them a much needed airing. In a crowded hospital ward the hygienic importance of such repeated disinfection can hardly be over-estimated. At the risk of being called an enthusiast, I will go a step further, and hazard the assertion that there is a form of puerperal septicæmia not necessarily accompanied by putrid lochia, at least not appreciably so, but indicated by high temperature, rapid pulse, complete anorexia, heavy sweats, and, later, by herpes labialis, which stubbornly resists treatment until the patient is made to get out of bed. This I have seen often enough, after keeping a woman on her back for some pelvic disturbance, to prevent any mistake as to the relation of cause and effect.

Lying-in women are encouraged to get up for good when they feel so disposed, because there are, to my mind, strong objections to the rigorous maintenance of the recumbent posture. Labour is, in general, a physiological process, and there can be no sound reason why it should be made to wear the livery of disease. Nature teaches this very plainly, for most women wish to get up long before their physicians are willing to let them. The fact of a woman's wishing to get up is to me a very good reason why she should get up. In the second place: few physicians will deny that nothing so relaxes the tone of muscular fibre as a close confinement in bed. In my experience, a woman ordinarily feels stronger on the fifth day than she does on the ninth, if rigorously kept under quilts and blankets. Once more: the upright position not only excites the womb to contract, but, by distributing the blood and equalising the circulation, it actually lessens the amount of the lochia and shortens their duration. On the other hand, the dorsal decubitus keeps up a passive congestion of the womb as a whole, the engorgement of the greatly hypertrophied placental site, and a blood-stasis in the now thickened posterior wall, all important factors in hindering the process of involution. Again: uterine diseases are hardly known among those nations whose women early leave their beds.

The arguments against the customary purge on the second or third day are to my mind very sound. I am well satisfied that the "milk fever," for which it was originally introduced into practice, is essentially a myth. Genuine "milk fever," as such, is a rare complication, and, when present, of no significance whatever. Unless the nipples are chapped or abraded, the engorgement of the breasts hardly ever leads to abscesses. In proof of this assertion, how rarely does mastitis follow still-births! In the vast majority of cases, the occasional constitutional disturbance, the chill-and-fever on the third or fourth day, the so-called "milk fever," is owing to a septic cause, and not to a mammary one. True, the breasts are by this time swollen and painful, but it is a mere coincidence, and coincidence is here mistaken for causation. Purges are, therefore, not only wholly unnecessary, but they disturb the equilibrium, and, what is worse, promote absorption of septic matter. Partly from increasing the activity of the absorbents, the hæmorrhages of labour are very liable to be followed by blood-poisoning. Now, the same result may be logically predicated of a depletion in the shape of a purge. Were my readers to go over their cases of puerperal fever or of other puerperal diseases, I think they will find some of them dating from the day on which a purge had begun to act. Is it not more than a mere coincidence that these diseases attack a woman usually on the third or fourth day of or following the administration of the customary purge? Three instances of puerperal peritonitis, two of them ending in death, have come to my knowledge, which were referrible as plainly as could be to purgation. In one, the lady was slowly but surely mending from the effects of a severe instrumental delivery. For some reason or other she took, in the third week, an ordinary dose of citrate of magnesia. This violently purged her, and at once brought on a fatal attack of fever. In the other two the patients could not have been doing better, until they got a dose of castor oil, which was given for no other reason than that the authors of our text-books were haunted by the bugbear of "milk fever."

Quinia is given without stint, because, apart from its well-known tonic and antiperiodic properties, it possesses others, which make it, above all remedies, the one best suited for puerperal disorders. By lowering high temperature it retards the oxidation of tissue, and hinders the formation of fibrinous concretions. By shortening the excursions of uterine fibres in their alternate contractions and expansions, it lessens the diastolic engorgement of the womb, diminishes the calibre of uterine blood vessels, and thereby tends to keep their protective coagula from becoming loose and soluble. By contracting the placental site it proportionately limits that area of absorption. By constringing the coats of the capillaries, and by its inhibitory power over the migration of colourless blood-corpuscles, it either arrests suppurative inflammation or restrains its violence. Finally, it seems to exert a positive curative action on the blood in cases of putrid or purulent absorption. Clinically, I have found nothing comparable to quinia, as well as a prophylactic against puerperal disorders as a remedy for them. But it must be given early, frequently, in large doses, and pushed to a high grade of cinchonism.

Ergot is a very untrustworthy oxytocic. One never can tell bforehand whether it will behave kindly, or run amuck. It is, therefore, no favourite with me. The vectis and the forceps being under perfect control, are far better oxytocics; their aid is therefore often invoked, in order to save a woman's strength, and to avoid that laxness of uterine fibre following a long and weary labour. Ergot is, however, given as the head is about to emerge, in order to lessen the chances of a flooding or of unruly after-pains, and to aid the pains of involution by condensing the uterine globe to its minimum size. For an analogous reason, I feel persuaded that Credé's method of placental delivery provokes to a more complete involution. It certainly empties the womb of all clots, and squeezes it down to its smallest capacity.

The prolonged use of the binder is given up. I wish, however, here to state that even its brief use during the first few hours after labour, is not held by me as a cardinal point. I begin to have grave doubts whether it is of any value whatever in the prevention of hæmorrhage. On the score of utterly abandoning it I am quite open to conviction.

ANÆSTHETICS.

In our last issue we gave an account of Nelaton's treatment of chloroform narcosis, as related at the Norwich meeting of the British Medical Association in papers by Dr. Marion Sims and Sir J. R. Cormack, M.D.

In the same section (Surgery) there was also read a paper "On the Administration of Laughing Gas and Ether, singly, or combined in any Proportion desired," by Mr. J. T. Clover, whose apparatus possesses great advantages.

The pungency of ether-vapour, when not largely diluted with air, and the frequency of violent delirium when it is so diluted, were spoken of as serious objections to its use. Mr. Clover's apparatus supplied, first, pure laughing gas, which was not unpleasant to breathe; and afterwards, by turning a dial on the face-piece, supplied ether-vapour gradually. This was done with the hand which held the face-piece, and consequently the other hand was at liberty to feel the patient's pulse. Less ether was required than when no gas was used; consequently, less of it was absorbed by the tissues of the body, and recovery from the effects of the anæsthetic took place more quickly and with less intoxication.

Mr. Lawson Tait differed from Dr. M. Sims as to the cause of death from inhaling chloroform being due to cerebral anæmia. He thought it more probable that the explanation lay in some poisoned condition of the blood. There was no evidence to show that death from chloroform ever occurred to an infant or to a woman during labour.

Dr. Humphry thought the administration of chloroform greatly increased the responsibilities of operative surgery; and there were few surgeons who had not experienced that dreadful suspense in cases of chloroform narcosis where death appeared imminent. He thanked Dr. Sims for the additional hint as to what to do in cases such as these. Dr. Humphry thought that allusion had not been made to those cases where death took place at the early part of the administration, preceded with violent convulsions. He considered that such cases could not be attributed to cerebral anæmia, and he agreed with Mr. Lawson Tait that an explanation was to be sought in some altered condition of the blood. He suggested that nerve-exhaustion might explain this, violent excitement being followed by correspondingly intense depression. He had observed in cases of death following upon chloroform narcosis, that the blood was of a consistence like treacle.

Mr. Baker mentioned that he always gave the patient a dose of brandy before proceeding to administer chloroform, with very good effect.

Mr. Lund alluded to the importance of always having at hand, when administering chloroform, means for applying galvanism, and illustrated this by cases which had come under his notice at the Manchester Infirmary.

Sir J. Rose Cormack attached less importance to inversion than Dr. Marion Sims, and thought it would be a dangerous mistake unduly to exalt its efficacy. In cerebral anæmia from any cause, the patient ought, as a rule, to be placed in the horizontal position, with the head low and the feet raised about a foot. The cases in which inversion is called for are rare—quite exceptional. It ought, moreover, to be performed most carefully and watchfully—tentatively, in fact. Too long-continued inversion may prove very dangerous by causing distension of the right side of the heart, which will in turn cause and maintain a cessation of its contractions—which causes death in a certain class of cases of chloroform inhalation. This and other poisons, such as creasote and prussic acid, given in large doses, produce instantaneous paralysis of the right side of the heart; the auricle goes on receiving blood and is unable to get rid of it, so that by distension the paralysis (which in some cases would be only momentary) is rendered permanent; the result is probably that instant or very rapid death to which the French apply the term *sideration*—death by star-influence. This subject of quick death from sudden distension of the right side of the heart, he had investigated experimentally many years ago, and he still held to the views he had then published. Touching Mr. Clover's apparatus, it was unquestionably a most admirable invention, but its cost and complexity must prove fatal to its introduction into general use. It will be a great source of safety when the administrator is a steady, watchful man, familiar with the system and the instrument. On the other hand, it is apparent at a glance that negligence or hardihood might readily cause an untrained or self-sufficient administrator to turn the valves too much, too little, or not at all. The induction of complete anæsthesia for surgical operations can never be divested of all danger; but (in theory at least) by Mr. Clover's method the danger may, it would appear, be reduced to its minimum. Slow administration, using the conically arranged towel, and letting plenty of air be breathed, generally secure immunity from danger; and under all circumstances such precautions and appliances can be commanded. When cost and complexity are not objections, and when Mr. Clover's apparatus and a person who knows well its use are at hand, it ought to be employed. The remark which was made by Mr. Baker was of great importance—viz., that a moderate stimulant, a dose of wine or brandy, given shortly before the commencement of inhalation, greatly tends to prevent the anæsthetic vapour from producing a too depressing influence on the heart.

THE ACTION OF ANÆSTHETICS ON THE RED CORPUSCLES OF THE BLOOD.

In connection with the papers above noticed, it may be well to draw attention to Professor Hüter's views, as stated in an article on stasis and embolism of the blood-corpuscles, published in the *Deutsche Zeitschrift für Chirurgie*, and of which a *précis* has appeared in the *British Medical Journal.*

Professor Hüter first refers to the changes which the red corpuscles of frog's blood, removed from the body, undergo on the application of various physical and chemical agents, such as glycerine, ammonia, carbolic acid, chloroform, cold, and heat. These changes, which vary in degree, but are essentially the same in character, consist in notchings and angular irregularities of the corpuscles, often reaching as far as the centre; folding together of the membrane of the corpuscles like a paper envelope; rounded forms are also observed; and sometimes there is nothing left but a nuclear structure, consisting, like the white corpuscles, of fine granules, and distinguishable from the white corpuscles only by its small size and frequently by its oval form. When the above-mentioned agents are applied to the frog's mesentery, this becomes reddened, and microscopic examination shows that the redness depends on dilatation of the vessels combined with a complete stasis of the corpuscles. The idea that this appearance can be explained by the action of the re-agents on the walls of the vessels is contradicted by the rapid occurrence and equally rapid disappearance of the stasis; the phenomenon is rather to be explained by the purely mechanical action of the changes induced in the red corpuscles by means of the various agents, even when applied to the epidermis. Under the microscope the corpuscles can be observed to become indented; first one, and then another, remains hanging on to the wall of the vessel, until at last all the capillaries in the irritated region, and even the adjacent small arteries and veins, are filled with notched red corpuscles (globular stasis). Both during the existence of the stasis, and especially during its rapid breaking up, single altered corpuscles, or large masses of them, may pass into the circulation, and, adhering to the walls of the vessels in other organs, again produce a stasis (globular embolism). This embolism does not lead to the form of distinct embolic plugs, but to diffuse multiplication of stases of corpuscles through the whole circulatory system; for the masses of corpuscles which pass into the circulation readily break up on meeting with any obstacle. The occurrence of embolism from blood-corpuscles in parts where certainly no change in the vessels has occurred, gives a certain degree of support to the assertion that the cause of globular stasis is to be sought in the change of condition of the red corpuscles.

In a pathological point of view Hüter attributes great importance to the stasis of the corpuscles. He believes, in the first place, that irritants act essentially by producing stasis in the region to which they are applied; and that thus the inflammation induced by such means cannot be used in the explanation of the complicated phenomena of ordinary inflammations.

He maintains, further, that these researches are of great importance as regards pharmacology and toxicology. It is already known that many poisons, even those which do not act directly as blood-poisons, produce changes in the blood-corpuscles; and hence it may be supposed that they first produce changes in the form of the corpuscles, then globular stasis, and thus mechanically and indirectly lead to further changes. In experiments on frogs, it was very remarkable that all the agents which induced globular stasis also acted as anæsthetics; this is attributed by Hüter to the formation of embola of red corpuscles in the brain. In this way he explains the action of anæsthetics, such as chloroform, ether, and alcohol, the anæsthetic power of which is in proportion to the amount of change of form which they are capable of producing in the red corpuscles. The corpuscles of chloroformed rabbits showed very irregular forms; a notched contour, frequently with one or two large club-shaped processes. After anæsthesia with ether, the corpuscles were mulberry-shaped. After alcohol, there were only very slight indentations, and these could be observed in the stage following intoxication both in rabbits and in man. It follows from these observations that the administration of chloroform by inhalation is bad, as in this way the blood-corpuscles are altered while in the lungs, and globular stasis may be produced in these organs. Frogs can be brought into a state of anæsthesia by the action of chloroform-vapour on the skin of the thigh, while at the same time the part where the application is made assumes a redness which cannot be removed by pressure; and the blood-corpuscles removed from this part show the same changes (club-shaped processes, &c.) as in rabbits. This condition is present in the so-called chloroform-erythema which is often observed, especially in tender-skinned individuals. The beneficial action of lowering the head and raising the legs in cases of apparent death from chloroform, may be explained by the more easy breaking up of the globular stasis in this position, as the following experiment shows: The tongue and web of the foot of a chloroformed frog are spread out on a glass plate. If the animal be held for some time with the head upwards, extensive globular stasis will be observed in the vessels of the tongue, while the process is only beginning in the web; when the position is reversed, stasis sets in at once in the web of the foot and disappears from the tongue. Does the weight of the blood in the most dependent parts aid the slightly adherent corpuscles to pass through the vessels? In any case, it seems clear that chloroform is a very dangerous agent, in consequence of its strong action on the blood-corpuscles, and that therefore ether, the action of which is less powerful, is to be preferred as an anæsthetic.

If Hüter's explanation of the cause of the anæsthetic action of the substances mentioned be correct, nearly everything which produces globular stasis must also be capable of producing anæsthesia by the formation of globular embolism in the brain; and thus it would seem that even warm baths, perhaps with the addition of easily diffusible agents, might be also used to produce anæsthesia. A frog was immersed for twenty minutes in a five per cent.

solution of common salt at the temperature of the room, and was anæsthetised, with the production of globular stasis over the whole skin.

The application of carbolic acid is proper only in the first stages of the treatment of wounds. After the formation of granulations has taken place, it produces permanent stasis of the corpuscles in their vessels, and thus hinders the growth of the granulations as well as the formation of epidermis.

INTERNAL HÆMORRHOIDS.

THE *Medical and Surgical Reporter* of October 3 gives an extract from the surgical clinic of the Philadelphia Hospital of John H. Brinton, M.D.

A man, sixty years of age, suffered for thirty years with an enlargement, or protrusion from the anus. During the last ten years these tumours have bled, and bled profusely. This aggravated hæmorrhage has occurred every three or four weeks, but in the intervals there has always been more or less loss of blood. As a result of this constant drain, his constitution has suffered severely; he is weak and feeble, possesses no energy, and unable to earn his living.

He was admitted to the hospital, and the case furnished the text of Dr. Brinton's lecture, in the course of which he said: Essentially, hæmorrhoids depend upon a varicose condition of the veins of the rectum, at all events in their incipient stages. You know, perhaps, that the lower part of the rectum is supplied with blood through three channels; the superior, middle, and inferior hæmorrhoidal arteries. The first named vessel is given off by the inferior mesenteric; the second by the internal iliac, and the last named by the internal pudic arteries. These different hæmorrhoidal arteries are accompanied by their respective veins. As a consequence, the blood from the rectum finds its way back into the general circulation through three channels, to wit, the internal internal pudic, and inferior mesenteric trunks. The latter, as it ascends, pours its blood into the portal vein, and passes through the liver.

You will thus understand how it happens that the superior hæmorrhoidal vein, a vein of considerable length, destitute of valves, and entering into the composition of the portal system, may at any time be subjected to the general disturbing hepatic influences which tend to produce portal congestion. And you will also see how, such portal congestion having occurred, we may have interference exerted upon the return of the blood from the rectum, through the medium of the superior hæmorrhoidal, and its prolongation, the inferior mesenteric veins.

Now, gentlemen, let us suppose that from any cause, whether portal disturbance, the result of liver trouble, or from constipation, and the accumulated fæcal pressure upon the rectal veins, or from other causes, these veins should be kept permanently engorged or filled with blood, what would result? Inevitably there would be over-distension of the veins, accompanied at first by thinning and afterwards by hypertrophy of their walls. In other words, these veins would become varicose, and such varicosity would be most marked at their inferior termination, near the anus, where the venous trunks inosculate freely, and form lips or pouches. That portion of the varix which forms above the sphincter ani, and which is covered by the mucous membrane of the gut, is known as the internal pile. That which is developed below this muscle, and which has a muco-cutaneous covering, is the external pile.

In its incipient stage, the interior of the dilated or varicose vein is usually patulous, so as to permit the free passage or circulation of blood. In a short time, however, clots form, especially in the external pile. I shall doubtless have frequent occasion to show you how, by an incision of such a hæmorrhoid, a clot can be evacuated from the containing cavity. It often, too, happens that these sacs suppurate and discharge their contents, and there are left only those pendulous folds of skin, tabs, as patients call them, which we so frequently observe fringing the external margin of the anus.

I have spoken to you, thus far, of a hæmorrhoid as a varicosity or dilatation of a vein. But it may be, and most frequently, indeed, is something more, especially when the affection has been of long duration. For then we find that besides the distension of the walls of the vein, there is also thickening and hypertrophy, and that upon the outside of the venous parietes a thick, projecting velvety growth developes. This is well supplied with small arteries, which bleed freely when examined, and which bleed, too, most copiously, during the evacuation of the patient's bowels. Occasionally this hæmorrhage occurs at almost every evacuation; but usually, I think, the bleeding is only severe at intervals of two or three weeks. In the interim there may be seen bleeding, but generally far less in quantity, and often, indeed, sufficient to constitute a stain.

The external pile inconveniences its possessor by the sense of weight, distension, and irritation which accompany it, and by its tendency to undergo attacks of acute inflammation. It is oftentimes, too, attended by an intolerable pruritus. The internal pile, in addition to most of the above-mentioned inconveniences, is marked also by the bleeding from which it derives one of its synonyms, and which is not infrequently periodical and prodigious.

Examination of the patient upon the table followed. To prepare him for this examination and any operation which might be necessary, his bowels had been acted upon by castor oil, followed by the employment of a full injection. He had also been directed to strain over a bucket of hot water, in order to force down the offending growths.

Now, said Dr. B., as I separate the buttocks, you observe the large size of the hæmorrhoidal mass, projecting from above the external sphincter. Mark, if you please, its dark, villous appearance, and its extent of base, embracing almost the entire circumference of the bowel. The surface of the tumour is studded with hæmorrhagic points, and as I press upon the mass the blood flows freely. Underneath the pile you observe a projecting ring or fulness surrounding the anus. This is caused by a partial prolapse of the lower portion of the rectum, dependent, no doubt, on the long-continued habit of constipation into which the man has fallen; for he states that his bowels are rarely moved twice a week; often, indeed, but three times in two weeks. The removal of the hæmorrhoid will doubtless relieve this prolapse.

The case is evidently a bad one of internal or bleeding piles. Now, how shall I proceed to their cure?

Excision by the knife or scissors is out of the question. Such an attempt would certainly be followed by terrible bleeding. Removal by the écraseur, or by a platina wire heated to a white heat by the galvano-cautery, are also objectionable, for both of these methods are at times apt to be followed by troublesome hæmorrhage. So, also, is the destruction of the growth by the actual cautery, after the method of Mr. Henry Smith, of King's College, London.

The method which I adopt in all these cases of internal piles, and which I confidently recommend to you, is that of ligation. If you follow me closely you will see how this is effected. The patient will now be brought under the influence of ether, and while this is being done I will draw your attention to the *modus operandi* of the ligature in these cases. I have here a stout curved needle with a large eye. This is armed with a strong double ligature—in fact, a piece of fishing-line—which cannot be broken by any strain my hands can put upon it. With this I intend to traverse the base of the tumour, and I shall then strangulate the mass in segments. It will at once occur to you that this procedure may be productive of great pain to the patient when he shall have emerged from the effects of the ether. Not so, if the ligature be properly applied.

In this diagram the mode of nerve distribution at the anal orifice is correctly represented. It is copied from Mr. Hilton's book on "Rest and Pain." You see here the internal pudic nerve sending a shower of branches from above downward through the thickness of the rectal walls. A little distance above the anus these nerve filaments rest *beneath* the mucous membrane, and they pierce this latter, to be distributed cutaneously on the line at which the mucous and cutaneous surfaces become continuous. This locality you can recognise in the living subject by a whitish line; see, here it is on our patient.

He is now fully under the anæsthetic, and I proceed to my operation. First of all, I grasp the hæmorrhoidal mass with this strong toothed forceps, draw it strongly downward, and have it so held by my assistant, Dr. Keating. I then take my scalpel and make an incision along the white muco-cutaneous line I have indicated to you. This incision is not deep, but is sufficient to divide the thickness of the mucous membrane, and consequently also the filaments of the pudic nerves just above their emergence. I next pass through a needle with its double ligature, the point entering in the cut I have made, and escaping above the hæmorrhoid. I divide the ligature and remove the needle. The respective ends of the two ligatures are then tied, the upper one over the mucous surface of the pile, whilst the lower one falls in the track I have made with my scalpel. I then surround the bases of both included masses with a thread from either ligature, and knot them very tightly. This I do to prevent any bleeding at the point of needle puncture. This series of manœuvres I repeat until the entire mass of the tumour is surrounded; in the patient before you three needles and five ligatures are demanded. You have witnessed how forcibly I tie the thread. Remember, that the more tightly you tie them the more perfect will be the strangulation, the less danger of hæmorrhage, and the more rapid the cure.

The operation is finished, the whole hæmorrhoidal growth is strangulated—and you saw how large it was. I then return the mass within the bowel, leaving the free end of the ligatures twisted together and projecting through the anus, in case a possible hæmorrhage might render further manipulation desirable, although this is hardly to be anticipated.

For after-treatment I direct a one-grain old opium pill, to be repeated in four hours, and afterwards as often as may be necessary, to prevent any motion of the bowels. His food will be of a fluid and farinaceous character. The constipation I enforce for seven or eight days, at the expiration of which time I order a more solid diet, which, in all probability, will be followed by a natural motion and the fall of the ligatures, unless they should separate earlier.

THE SANITARY CONDITION OF COMMUNITIES AND THE COMPARATIVE SALUBRITY OF TOWNS.

At the opening meeting of the Society of Medical Officers of Health, on Saturday, the 18th ult., the President, Dr. Letheby, delivered an address on "The Estimation of the Sanitary Condition of Communities, and the Comparative Salubrity of Towns," in which the statistics of the Registrar-General were handled with freedom, and which should lead to some explanation from that official. No more important contribution to Public Health has been recently made, and it is desirable that the views stated should receive the attention of the profession.

Dr. L. said that the problem of the sanitary condition of the community is not so simple, or so easy of solution as is generally supposed, and that the common and vulgar method of estimating it by the death-rate, as usually calculated, is entirely fallacious. In proof of this he alluded to the disturbing effects of migration, the birth-rate, the proportion of the two sexes, and other circumstances in vitiating the results, and he quoted a number of authorities in proof of it. As regards migration, he said that when there is a notable migration of young adult lives from country to town, as is generally the case, the death-rate of the rural district in which the young lives have been produced is unduly augmented, while that of the town, which acquires such lives without the vital cost of rearing them, is proportionately reduced. This is the condition of things in every large town in the kingdom, and he took London as an example. Seven-and-twenty years ago the population of London, as determined by the census of 1851, was 2,362,236. In 1861 it amounted to 2,803,989 persons; and at the last census, in 1871, it was 3,254,260, so that in twenty years the total increase was 892,024 persons, or nearly 38 per cent. The natural increase in that time, as estimated by the excess of births over deaths, was only 595,111, or only about 25 per cent., the difference, therefore, namely, 296,923, or nearly 13 per cent., is referable to the additions made to the population by the entrance into it of fresh lives, and this is altogether independent of the large number of such lives which took the place of those who, from sickness or other cause, left the metropolis to live and die elsewhere. All these were young healthy lives, at perhaps an average age of 20, and the cost of producing them must have been considerable. In London the death-rate of infants is so large that not more, and probably much less than 60 out of every 100 born, live to be 20 years old. At this rate the 296,923 young adults who were added to the population of London during the last twenty years, would, if they had been produced here, have cost 494,872 births, and 197,949 deaths, not one of which has appeared upon the registers of the metropolis. It is hardly possible to compute the exact number of young persons who, in addition to the preceding, have come to London and taken the place of the sick and infirm who have left it; but an examination of the census will show that nearly half the population of London are aliens, and have migrated to it from the provinces. Probably the net immigration during the ten years from 1851 to 1861 amounted to 31,820 persons per annum, or rather more than double the annual number of young recruits (13,356), which, as before said, went to the increase of the population. Assuming that they were at an average age of 20, they would, if they had been produced in London, have cost annually 53,030 births, and 21,213 deaths. Some of these or their equivalents may have appeared upon the registers; but it is easy to perceive how the vigour as well as the numerical strength of London is maintained without the cost of infant life, and that which is a gain to London is necessarily a loss to other places. How much the statistics of mortality have been disturbed by such migrations cannot be precisely estimated; but no doubt they have been vitiated to such an extent as to render them useless as exponents of facts. Dr. Letheby showed from another set of facts, namely, the proportions of males and females at different ages in the population of London, that there was a large influx of young adult lives; for although the proportion of children in the population of London is relatively small, especially in the heart of the city, where it amounts to only 263 per 1000 of the population, as against 356 for all England, yet the number of young persons, at from 15 to 35 years of age, is strikingly large. In the City proper it amounts to 415 per 1000 of the inhabitants, and in the whole metropolis it is 360 per 1000; whereas in England and Wales it is but 335 per 1000. At 55 and upwards the number for the metropolis is only 89 per 1000, as against 105 for all England. The proportion of females also in the population of London is very large. In the heart of the city the number of women at from 15 to 55 years of age amounts to 337 per 1000 of the inhabitants, and in the rest of the metropolis it is 315 per 1000, although for England and Wales it is only 280 per 1000. All this is attributable to the migratory character of the population of London, for at the census of 1861 there were more than half a million persons who could hardly be said to have a fixed home in London. There were, for example, 153,104 female domestics, besides about 96,400 milliners, dressmakers, shirt-makers, sempstresses, &c., of less than 35 years of age; and these, with rather more than 257,000 shopmen, porters, messengers, clerks, servants, labourers, mechanics, &c., make up a total of 506,676 persons under 35 years of age, who would doubtless leave London when from sickness or other cause their labour became unremunerative. This is clearly shown in the tables of mortality at different ages. Up to the age of 10, and after the age of 25, in the case of males, and 35 in that of females, the death-rate in London is much greater than it is in all England; but at the intervening ages, from 10 to 25, and 10 to 35 respectively, the death-rate in London is much below the average, showing that persons at those ages go away from London when sickness oppresses them; and this is further proved by the fact that, as the mortality falls in London, it rises in the neighbouring counties where the sick and infirm resort. The disease which most strikingly exemplifies this is phthisis, a disease which not only attacks persons in the prime of life, but also gives them ample opportunity for removal to the country. Dr. Letheby therefore concludes that the gain to London by such migrations is three-fold—in the first place, the population is constantly receiving a large number of young adult lives without the vital cost of producing them; in the second place, it gains by the substitution of such lives for the weak and ailing; and in the third place, it gains by the fusion of such lives of high value with the general mass of the population of comparatively low value: for at the age of 20 the death-rate is only about 7 per 1000, whereas that of the general population is more than 24 per 1000. A like condition of things prevails in all the cities and large towns of the kingdom, and it so seriously disturbs the death-rate, as usually calculated, as to make it no longer expressive of facts. In those cases where sick persons resort to public hospitals or to the favourite sea-side places of England, the disturbance is still greater. There is a good example of this in the western division of the city of London, where St. Bartholemew's Hospital is situated, for, according to the returns of the registrar-general, the average death-rate of that district is from 45 to 50 per 1000, whereas the true death-rate is from 27 to 29 per 1000. In like manner the death-rates of Whitechapel, of Islington, and of other districts of London are disturbed by the presence of large hospitals. Another circumstance which destroys the sanitary value of a death-rate is the birth-rate: this is illustrated by the fact that wherever the birth-rate is high, the death-rate is high also, and this is observed not only among the nations of Europe, but also among the registration counties and districts of England. France, with a birth-rate of only 26·26 per 1000 of the population, has a death-rate of only 23 63 per 1000; but Austria, with a birth-rate of 39·86 per 1000, has a death-rate of 30·34. Spain, Italy, and Prussia, exhibit the same general relation; and in England the registration divisions, the counties and the towns show a similar condition of things. Taking, for example, the ten registration divisions of England and Wales, it will be noticed that the birth-rates and the death-rates are closely comparable. Beginning with the south-western counties, where the birth-rate is only 32 per 1000 of the population, and the death-rate less than 20 per 1000, it will be noticed that, as we pass on in the order of increase, the birth-rates and death-rates advance together, so that when we come to the last of the series—the north-western counties, where the birth-rate is 39 per 1000, the death-rate is 26·3. The same thing is observable in the individual counties of England. Twenty of them have an average birth-rate of from 30 to 33 per 1000, and a death-rate from 18 to 21 per 1000, while the rest of them (21 in number) have a birth-rate which ranges from 33 to 42 per 1000, and a death-rate from 19 to 27. In the former group the mean birth-rate is 31·8 per 1000, and the death-rate 19·6; and in the latter they are 35·7 and 22 respectively. As a general fact, it may be said that, where the birth-rate is from 30 to 31 per 1000, the death-rate is about 19; where it is from 31 to 33, the death-rate is nearly 20; where it is from 33 to 35, the death-rate is nearly 21; where it is from 35 to 37, the death-rate is nearly 22; and where the birth-rate exceeds 37 per 1000, the death-rate averages 24·4. As individual examples, the Ridings of Yorkshire may be taken as good illustrations. In the North Riding the birth-rate is 33·9 per 1000, and the death-rate 20·5; in the East Riding the numbers are 34·5 and 22 7; and in the West Riding they are 38·1 and 24·9. It is not possible, without considerable labour, to compare the birth-rates and death-rates of the town and rural districts of England; but Dr. Stark has done this for Scotland, and the results are remarkably instructive, for in the principal towns of Scotland, where the population exceeds 25,000, the average birth-rate is 38·73 per 1000, and the death-rate 28·25. In the large towns, with a population of from 10,000 to 25,000 persons, the birth-rate is 38·07, and the death-rate 24·57; in the smaller towns the numbers are 36·44 and 21·24; and in the rural districts they are 31·49 and 16·95. So also if we take the large towns of England and Scotland and group them according as the birth-rate is over 38 per 1000 or below it, it will be found that in the former case the average birth-rate is 39·6 per 1000, and the death-rate 29·5; whereas, in the latter the numbers are only 34·4 and 25·7. These facts are indisputable, and, according to Dr. Letheby, they afford conclusive evidence of the reciprocity of these numbers. They show, indeed, that they are in some way mutually dependent, or perhaps related as cause and effect. Dr. Stark believes that a high birth-rate is an effort of nature to compensate for the excessive waste of life in large towns; and the registrar-general appears to hold to a like opinion, for he says that, "wherever from the combined effects of intemperance, dirt, bad ventilation, and drainage, the mortality is greatest, there also the ratio of births to the population is highest." But Dr. Letheby reverses the argument, and says, with Mr. Andrew Watt, of Montreal, that "wheresoever the ratio of births to the population is highest, there also the mortality is greatest, and the conditions being equal, will be in proportion to the birth-rate." Dr. Letheby has already expressed this opinion in one of his annual reports of the sanitary condition of the City of London, and the registrar-general has replied to it in a memorandum of the "Significance of Rates of Mortality." But Dr. Letheby complains that the document is obscure, and does not touch the question at issue, but raises a new question as to the effect of an excess of births over deaths, saying that "the mortality of a population with an excess of births over deaths is lower than the mortality of a stationary population where the births and deaths are equal." Although this is no part of Dr. Letheby's proposition, yet he accepts it as proof of the relationship of births and deaths. It is curious, however, says Dr. Letheby, to note that the registration facts of the country do not support the registrar-general's proposition, but show that as the excess of births over deaths becomes larger and larger, so also does the mortality of the population. If the registration counties of England be arranged in the order of birth-rates it will be found not only that the death-rates advance with the birth-rates, but also that the excess of births over deaths becomes larger. Where, for example, the birth-rate ranges from 30 to 32 per 1000 of the population, and the death-rate averages 19·2, the excess of births is only 11·9; where the range is from 32 to 34 per 1000, and the average death-rate is 20·1, the excess is 12·8; and so on step by step until we reach an average birth-rate of 39·8 per 1000, with a death-rate of 24·7, when the excess is 15·1. The explanation of all this is to be found in the fact that the mortality of infants is excessively high (46·5 per 1000 in the first month of their existence, and 150 per 1000 in the first year), and that it contributes very largely to the total mortality. In all England and Wales, where the average birth-rate is 35·2 per 1000 of the population, the deaths of children under 5 years of age amount to 40 per cent. of the total mortality. If this were not so, the natural rate of increase of the population would be prodigious. At present the annual excess of births over deaths in England and Wales is 12·8 per 1000 of the population; but suppose that it was 18 per 1000, as it is in two of the registration counties of England, the population would be doubled about every 40 years; so that the 22,712,266 of the census of 1871, would become rather more than 45 millions in 40 years, and nearly 91 millions in 80 years, which in a long time, in 120 years, or about two generations, would be nearly 182 millions, which is the estimated population of India. But this sort of thing could never last, for in about 240 years the population of England and Wales, unless it was exported year by year in enormous masses, would reach to rather more than 1,550 millions of persons, who would be as thickly placed over the whole country as the inhabitants of London are at the present moment. Happily this cannot happen, for, despite the views of the registrar-general, the birth-rate is the controlling element of the death-rate, and before the relative health of different communities can be compared the apparent rate of mortality must be corrected for the rate of increase by births as well as immigration.

Another circumstance which seriously interferes with the value of the death-rates as estimated in the usual way, is the relative proportion of males and females in the population, for as their death-rates are different (23·3 and 21·5 per 1000 respectively), the common death-rate must necessarily be influenced by it. In infancy and childhood the death-rate of males is nearly 10 per 1000 above that of females, so that in large cities where women and children abound, the death-rate must be under the normal proportion.

Other circumstances were referred to by Dr. Letheby, and illustrated by examples, as affecting the death-rates of the country. He showed that the practice of grouping places together under the name of some one town or place within the district was a source of error, and he referred to the fact that the census numbers of the population, taken in haste and at long intervals, were too uncertain for statistical purposes, and he quoted Mr. Sargant to show that the population of England and Wales was underrated by more than half a million—2·3 per cent.; that with respect to persons under twenty years of age, it was underrated by 5·5 per cent.; and that in the case of infants of less than a year old, the numbers were deficient to the extent of 12 per cent. with males, and 10·5 per cent. with females. In the second year of life the deficiencies were 11·5 and 11 per cent. respectively; and in the third year they were 2 and 1, making an aggregate deficiency of from 6 to 7 per cent. in the return of children under five years of age; and this deficiency was most irregular, being greater in some places than in others, and therefore irregularly affecting the death-rate. In addition to this, the common method of computing the population of a place from year to year between the census periods was eminently faulty, as the rate of increase was uncertain, there being no accurate registration of births, a faulty registration of deaths, and a total ignorance of the migratory movements of the population. Any attempt, therefore, to deduce laws from such imperfect data must necessarily result in failure, and it is absurd to suppose that the mere proportion of deaths to an uncertain population is any proof or evidence of the favourable or unfavourable condition of the health of the people. In determining so important a question, reference must be made to the ages, habits, and employments of the inhabitants, casual immigrants must be distinguished from permanent residents, and the loss by emigration, especially of sick persons, must be inquired into, the proportion of the sexes, the number of births, the vicissitudes of climate and seasons, calamitous events, and other modifying circumstances must be carefully examined. Until this is done the death-rate, as usually calculated, and ostentatiously paraded as an indication of salubrity, is not merely ridiculous, but threatens, as Mr. Rumsey says, to become a public nuisance. What more striking proof, indeed, can we have of the untrustworthiness of these so-called "death-rates" as evidences of sanitary progress than the remarkable fact that they remain unaltered, and, as it would seem, unaffected by such progress. Look at the enormously large amount of sanitary work which have been accomplished in London and in the large towns of Englang during the last twenty years; yet the death-rate, as calculated in the usual way, remains the same. In the City of London during the last three decades the death-rates were 25·29, 24·94, and 25·11 per 1000 of the population. In the whole metropolis they were 24·48, 23·86, and 24·14 per 1000. In the large towns and town districts of England they were 24·45, 23·52, and 25 per 1000, and in the whole of England they were 22·64, 22·11, and 22·69, differences which are insignificant when we consider how much has been done to improve the sanitary condition of the country.

Dr. Letheby then examines the method of determining the sanitary condition of a place by the death-rates at different ages, and he shows that, although this is a better method than the last, yet it is not sufficiently accurate for sanitary purposes, inasmuch as the errors of the census, the migrations of the people, and other circumstances invalidate the results. Taking the death-rate of children under a year old as an example of the difficulties of the case, he shows that the census number of such infants gives most inaccurate results; the census number, in fact, is the number of such infants living on a particular day, and born within twelve months of that day; whereas the deaths which have occurred in the year embrace not only the deaths of those born in the census year, but also of those born in the preceding year, and not a year old at the time of death. Suppose, therefore, that the real death-rate of male infants was 160 per 1000: of this number 50, or nearly one-third of the whole number, will have occurred in the first month of existence, 18 in the second, 13 in the third, and so on in a gradually decreasing ratio to the end of the year, when the number will be less than 7. It follows from this that every 1000 infants born at regular intervals during the year will lose by death 105 during the census, or calendar year, leaving 895 to be registered or enumerated at the time of the census; but the real number of deaths of infants under a year old has been 160—viz., 105 of those born in the census year, and 35 of those remaining over from the preceding year. The death-rate, according to this method of computation, will be 160 per 895, or nearly 179 per 1000; whereas the true death-rate is only 160 per 1000. A like error, though not of such magnitude, pervades the whole of the death-rates, and even the aggregate death-rate of the country. It is manifest, therefore, that the death-rates, as usually calculated, are not expressive of facts, and cannot be accepted as reliable exponents of the sanitary condition of a place.

Dr. Letheby concluded his address by referring to the circumstances which must be considered in estimating the salubrity of a place, saying that the sickness and mortality of young children, when properly estimated, are the signs of home influences; the like phenomena of adults are the indications of wholesome or unwholesome habits, occupations, &c.; and that the sanitary condition of a population can only be properly determined by reference to the statistics of disease as well as of mortality, and that all the modifying circumstances of age, sex, migration, climate, season, &c., must be carefully considered.

ABOUT BOOKS.

A Practical and Theoretical Treatise on Diseases of the Skin. By George Nayler, F.R.C.S. Second Edition. London: Smith, Elder, and Co.

When a book reaches a second edition, and that within a short time, we may readily infer that the work has been appreciated, and supplies a want. Such, we opine, has been the case in the book before us. Mr. Nayler dedicates his book to the memory of the late Mr. Startin, the founder of the Blackfriars Hospital for Skin Diseases, and throughout its pages more or less of Mr. Startin's views with regard to pathology and treatment are contained. The author pays a passing tribute to Mr. Startin's memory, with whom, during his lifetime, he was associated in private practice. The new matter in the book consists of a chapter on Congenital Syphilis, and also two valuable contributions from the pen of the late Mr. Startin—viz., on Feigned Diseases of the Skin, and one on Skin Diseases following Vaccination. Six pages of excellent illustrations are contained in the volume, whilst in each chapter one or more cases are given to illustrate the treatment.

Ichthyosis occurring in the fœtus, which condition of the skin has received the name of "Harlequin Fœtus," exhibits itself by the entire body presenting an assemblage of "lozenge-shaped spaces, or intervals caused by a separation of the fibres of the cutis, sufficiently numerous and distinct to warrant the appellation of a 'Harlequin Fœtus,' which is given to it" (page 67).

Mr. Nayler thinks that in the same category as spurious ichthyosis and ichthyosis cornea should be ranked ichthyosis linguæ, which has lately been treated of by Mr. Fairlie Clark. The name as applied to the tongue our author thinks unfortunate in all that relates to its origin, progress, and issue, and is totally distinct from ichthyosis properly so called—the latter, he says, always congenital, whilst ichthyosis linguæ never is; the disease in question is more allied to a warty growth, and sooner or later acquires a malignant character.

Our author has had many opportunities of investigating the disease known as *Lichen tropicus* when doing duty as an assistant-surgeon in the Upper Scinde, and also in the Red Sea and Persian Gulf. He states that this affection occurs at that time of the year when sickness is least prevalent, and is usually associated with excellent health. "The supposed danger of repelling suddenly the eruption by plunging into cold water has no existence. Sailors, of all classes of men, from their habits, or the exposure to which they are frequently subjected, as when engaged on survey duty, are most liable to "prickly heat," and yet continually bathe in the sea in this state without any ill consequences resulting therefrom."

The chapter on Lupus is very full, and well repays perusal. We regret that we have not further space at our disposal, as we have been obliged to omit many interesting points in the work before us. We think Mr. Nayler has written a practical book of much value.

SPECIAL DEPARTMENT.

QUARTERLY REPORT ON DERMATOLOGY.

By H. S. Purdon, M.D., L.R.C.P.,

Physician to the General and Skin Hospitals, Belfast, &c.

"LIQUOR PICIS ALKALINUS" IN ECZEMA.

Dr. Bulkley (*Detroit Review of Medicine*, Sept., 1874) contributes a paper on this remedy. The advantages claimed for the liquor picis alkalinus are, its ready solubility, so that it may be diluted to any extent, and the safety and convenience attending its use; for the dilution may be left to the patient, to be varied as the ever-changing character of the disease demands. Its efficacy, when properly used, in checking the itching of eczema, is not surpassed by any remedy within our knowledge.

LEPROSY IN THE SANDWICH ISLANDS.

Dr. Wythe (*Pacific Medical and Surgical Journal*, July, 1874) has a paper on leprosy in the Sandwich Islands. He says the tuberculated form is exhibited on the cutaneous and mucous surfaces. A feverish condition of the system is followed by an eruption of dark spots or patches, the serum escapes into the tissues and gives rise to hard and semi-transparent tubercles, with thickening of the skin and deposit of brown pigment. These patches undergo a slow degeneration, leaving white spots and cicatrices without ulceration, or great holes are left in the skin by a sort of dry gangrene.

The extremities do not drop off, as is usually supposed, by a process of ulceration, but the bones are absorbed and the muscles contracted. He saw many cases where the fingers or toes were all gone, while the nails remained intact. The bones of the nose and palate may thus be absorbed, and when to this are added tuberculous swellings on the face, the countenance loses its human expression and assumes that of the brute. The person afflicted in this manner, however, is not conscious of pain. Even to the last, suffering is prevented by the diseased state of the nerves.

Leprosy is still regarded as an incurable disease. Some cases of recovery have been known, but they are rare. Medical treatment in the asylum is directed to concomitant disease rather than the leprosy itself. To this end a supply of medicines is dispensed by a hospital steward—a white man, also a leper—under the general directions of Dr. Trousseau. He made a suggestion to the latter gentleman relative to the employment of glycerin, which seemed to promise well in ameliorating some of the symptoms. From the known action of this agent in histological investigatons, it may be a means of preventing the drying up of the tissues, which is so characteristic in leprosy. To this end it should be used by inunction, and internally when dissolved in large quantities of water, so that it may enter the circulation by endosmose. In the latter form it might also be combined with arsenic or other well-known remedies.

HERPES.

Surgeon Garden (*Indian Medical Gazette*, September, 1874) publishes an exhaustive paper on the subject of herpes, from which we take the following:—

Examples of zona crossing the median line without being double are by no means uncommon. In six cases of the sixty-eight there was a distinct patch of vesicles on the opposite side of the spine to that affected. In the *Journal of Cutaneous Medicine* a case is mentioned in which the eruption extended across the median line in front. There were two large clusters near the vertebral column, and the third in front crossed the linea alba from one side to the other to the extent of two inches. In another case, under the care of Mr. Bryant, the eruption extended posteriorly for two inches across the median line, and anteriorly for six inches. These cases depend on some abnormality in the distribution of the cutaneous nerves.

Zoster Pectoralis occurred in nearly one-half of the cases. As a rule, the eruption occupies the position of three or four nerves, rarely that of only one. Trousseau says that most often the eruption on the chest is found running perpendicularly to the axis of the body, and not obliquely in the line of the ribs, and intercostal nerves. Squire says that this is always the case, and from this draws the inference that the disease is not primarily neurotic. These cases he has seen frequently, but this perpendicular distribution is certainly not the rule. As the actual position of the herpetic clusters depends on the cutaneous nerves as distributed to the skin, whether posterior, lateral, or anterior, the more probable argument is that these cases depend on the peculiar distribution of these nerves, as do those cases on which a patch is found either crossing the median line or by itself on the opposite side. Barensprung notes that as the line of the eruption approaches the median line in front, it ascends a little, where it occupies the anterior terminal branches of the intercostal nerves. This he has noticed himself on more than one occasion. All the cutaneous branches of the intercostal nerves are not necessarily involved in any one case. The eruption is not unfrequently confined to either the anterior or the posterior branches of the lateral intercostal nerves. Most often they are simultaneously the seat of eruption, but not invariably. Cases also occur in which the anterior cutaneous nerves and the posterior alone are affected, the lateral remaining free. It is in those cases where the cutaneous offsets of the posterior branches of the dorsal nerves are affected that we find patches on the opposite side of the vertebral spine.

TREATMENT OF BURNS.

Dr. Baldwin (*Chicago Medical Journal*) has for a considerable time used eggs in the treatment of burns, the white and yolk together, well beaten up, as a local application, and the remedy has given great satisfaction. His manner of applying it is, after the eggs are well beaten, to saturate old and well worn pieces of muslin therein, and spread over the injured surface, two or three layers thereof being superimposed; the relief is immediate and complete. The dressing should be renewed each twelve hours, meantime, should it become dry, it may be moistened by dripping water over it. After the first two or three dressings he adds a little carbolic acid and glycerine, to correct any disagreeable odours, and also to stimulate the healing process. The dressing is easily removed, and leaves a clean, fresh-looking surface, not attainable under the old processes.

TREATMENT OF SHINGLES.

After exhausting all the methods advised for the treatment of shingles, and especially the atrocious pains which attend this disease, Dr. Bourdon adopted the following:—A stratum of morphinated collodium (collodium 30 grammes, chloro-hydrate of morphine 50 centigrammes) was applied to the diseased parts, without opening the vesicles. The pain ceased on the second day, and after seven or eight days, when the collodium fell off, the vesicles had entirely disappeared, and only a slight redness was apparent.—*Gaz. Med. Ital. Prov. Venete*, No. 3, 1874.

CAUSTIC LIME IN THE TREATMENT OF ONYCHIA MALIGNA.

Professor Vanzetti, well known on account of the method so strongly advocated by him of the cure of aneurism by digital compression, proposes a new method for the cure of onychia maligna. He has furnished convincing proofs of the efficacy of this plan in a monograph on the subject recently presented to the R. Istituto Veneto. In this he laid down the principle that the true and chief seat of the disease is situated in and limited to the matrix of the nail. He tried the application of the nitrate of lead recommended by Moerloose, who described twelve cases treated by this means successfully. He thought he could still improve upon this by using some substance which would absorb and dry up the pus, and accordingly tried quicklime upon two patients who presented themselves at the hospital with onychia of the feet. In one the disease had developed spontaneously, in the other as the result of an injury. In one of the patients the lime was left in contact with the affected part without renewal; in the other it was frequently renewed. Both did well, with perfect reproduction of the nail.—(*Lo Sperimentale*, Fasc. i., 1874, and *American Practitioner*.

AT THE SOCIETIES.

AT THE CLINICAL SOCIETY.

BLOODLESS SURGERY.

The opening meeting of the Clinical Society, on the 19th ult., was remarkable from the presence of Professor Esmarch, who gave an address on Bloodless Surgery.

Professor Esmarch prefaced his address by observing that many surgeons with whom during his visit he had conversed were imperfectly acquainted with his method. He then went on to remark that others used it, but not rightly; whilst others did not consider the prevention of loss of blood of any importance. Although the object of the method was to get good results in surgery, the only mode of proof of its value was its influence on the mortality after operation, especially after the amputation of limbs. A comparison of his results with those obtained by the antiseptic method was favourable, but he admitted that this is obviously inconclusive, from the difference in the hospitals in which they were treated, and the necessity of detailed accounts of individual cases. He therefore compared the statistics of cases in his own practice prior to and after the introduction of his method, and obtained striking results. Out of 88 cases of amputation of the thigh before its introduction, 37 cases, or 42 per cent., died; whilst of 67 of amputation of the leg, 19 died, or 28 per cent. Since its employment, out of 13 cases of thigh amputations, only 1 had died, and only 1 of 12 leg amputations, reducing the mortality from 36 per cent. to 8 per cent. for amputation of the lower limb. Even making allowance for the difference in numbers, these results tell strongly in favour of the bloodless method. Its employment, however, was by no means limited to operations on the limbs, but may easily be applied to other parts. For example, in cases of excision of the shoulder-joint, a piece of elastic tubing may be passed under the armpit, and held over the shoulder by an assistant, or, if the operation is prolonged, it may be fixed by means of an ovariotomy clamp. If this prove insufficient, other means can be used. Professor Esmarch illustrated this by a case that he had under his care last summer. It was that of a man between fifty and sixty years of age, suffering from a tumour the size of an ostrich egg in the axilla, which had been growing two years. Its removal was absolutely necessary, on account of the intense pain which he suffered. The tumour was wedged in between the scapula and the chest wall, firmly adherent to and moving with the scapula, but not with the humerus. Microscopic examination of a small portion showed its structure to be myxo-sarcomatous. As these growths often arise in the sheaths of nerves, it was thought to originate from the sheath of one of the cords of the brachial plexus, and on account of the probability of recurrence, removal of the whole arm with the scapula was decided on. The arm was bandaged with elastic webbing as far as the shoulder, and the outer two-thirds of the clavicle then removed in order to ligature the subclavian, the pulsation of which could not be felt from the surface. Both artery and vein were ligatured, and the cords of the brachial plexus cut across, and the arm was then removed with the scapula by anterior and posterior skin flaps. The edges of the flaps were united by sutures, and under carbolised oil dressing they united speedily. Professor Esmarch went on to show that superficial tumours—*e. g.*, erectile tumours of the scalp in children—may be readily removed, without hæmorrhage, by introducing needles and applying around the tumour elastic tubing. Operations on the male genitals may similarly be performed, after passing a piece of tubing tightly round the root of the penis and scrotum. As an illustratson of a still more advanced use, Prof. Esmarch related the following case: An old man came under his care last winter with extensive epithelioma of the penis, which involved the undersurface of the penis and the scrotum, forming a cauliflower mass the size of the palm of the hand, which bled freely and discharged an ichorous fluid. The urine escaped from a fissure in the centre of the growth. The inguinal glands were much enlarged, and there was great emaciation. For the operation, an elastic tube was passed round the root of the penis, over the front of the thigh on each side, and crossed over the sacrum. The penis and anterior wall of the scrotum were now removed, and then the enlarged glands in the groin with the integuments covering them; the crura penis were afterwards carefully dissected away from the corpora cavernosa and removed; and, an incision in the median line having been made, the scrotal flaps were made to cover the exposed surface in the inguinal regions, and the urethra attached to the edges of the wound. Shortly after the operation, symptoms of pleurisy supervened, and death occurred from extensive cancerous deposit in the lungs. With regard to the results of the method, of three hundred cases in which the bloodless method has been used, no evil has followed in any one. Even in the longest operation—which lasted two hours and a quarter, and which was in a case of necrosis of both tibiæ, with resection of one knee in addition—no harm was done by the prolonged absence of the blood. This objection was not therefore valid.

Mr. MacCormac said that, although no London surgeon had seen so many as 300 cases, he had found no bad results in any case from the employment of the method. In the only case in which marginal gangrene of flaps had been said to have occurred he believed other causes had been found to exist. The only operation in which a question might arise as to its applicability was excision of the knee-joint, when the oozing due to the sudden return of the blood to the weakened capillaries might be inconvenient by spoiling the splint and necessitating movement. The method has great advantages in the examination of injured parts and the search for necrosed bone.

Mr. Henry Lee regretted that Professor Esmarch had not distinguished between two classes of cases—viz., those in which the blood was left in the part removed, and those in which it was previously driven out by compression. In the former class he did not see any advantage in the use of the elastic bandage over the clamp Of the other class, he mentioned a case of tumour in the palm of the hand, the removal of which would have been impossible without Esmarch's method.

Mr. Clover ascribed the superficial sloughing of the flaps in the case mentioned by Mr. MacCormac to the caustic action of the carbolic acid spray on the surface when not neutralised by the alkaline blood. He considered the ordinary tourniquet with a narrow bandage better for encircling the limb, as it is not liable to snap like the elastic tubing when brittle from keeping.

Mr. Prescott Hewett said that, having assisted at the operation, he considered Mr. H. Lee's case alone a sufficient proof of the value of the method. He believed it would have been impossible otherwise, the tumour being attached to one of the metacarpal bones, and closely surrounded by the vessels; as it was, the operation was only a dissection, the parts looking like a wax model.

Professor Esmarch, in reply, said that he did not see how the clamp could be applied in such cases as for the scrotum, &c.; while, if it could, it would only be another application of the bloodless method, and the india-rubber tubing was simplest. He had never seen it break, and did not see how it could if well applied and of good material. He pointed out that a common tourniquet is passive, while the elastic rope is active in its pressure.

SOCIAL SCIENCE CONGRESS.

The Public Health Section was presided over by Dr. L. Playfair, who delivered a lengthy address, in which we find a forcible exposure of the manner in which our sanitary legislation has been muddled. On this subject the President said:—

"In England, at the present time, there is a casual agglomeration of 1,500 separate sanitary authorities, without system or cohesion. Their areas of administration are diverse in the extreme, being neither bounded by counties, parishes, nor natural watersheds, and their duties are divided without meaning between authorities in the same district. They have been lately put under medical officers of health without preparation or qualifications for their duties, some well paid and devoting their time to this important work, others having little more than nominal payment and giving little more than nominal time to their important duties. Nothwithstanding this too sudden and unprepared universal appointment of medical officers, yet in the administration of the Health Acts there has been recently manifested a disposition to 'distrust the doctors' and to work the Acts, at least at head quarters, by lawyers and other persons not connected with the medical profession. This is the old error of making common sense the fetish for worship, which Archbishop Whately and others have so effectively condemned. Even the most fervent worshipper of common sense, as opposed to technical training, never relies on it in important emergencies of his life. He goes to the lawyer to make his will or to convey property; he consults the parson on religious doubts when on the sick bed; and he does not spurn the doctor to cure him of his grievous ailment. But it is well known that the Local Government Board are afraid of the doctors in the administration of Health Acts. Who beside them possess the knowledge? I can testify, from an experience of thirty years in sanitary work—and impartially, because I am not in the medical profession—that there is not a class of men in the country who labour so zealously for the prevention of disease as the doctors, though their training hitherto has been cure, not prevention. Certainly their private interests have never been allowed to stand in the way of their efforts to uproot disease, although their living depends upon its existence. This unselfishness in the application of their science to prevention has always been to me a source of high admiration. Why, then, is there this vulgar distrust of the doctors in the administration of our Health Acts? Extend this prejudice against technical knowledge, and how absurd it would be. Would you improve the progress of telegraphy in this country by suppressing electricians; or the law and justice of the country by putting down lawyers? Would the Secretary at War promote the conduct of war by suspecting soldiers; or the First Lord of the Admiralty the efficiency of fleets by distrusting sailors? Would our railroads and harbours be better governed if engineers were held at a discount? But this is actually the state of things at the Local Government Board—the Health Ministry of the country. The Privy Council handed over to that board Dr. Simon and his associates, with a wealth of medical experience in public hygiene. Ever since, that wealth has been locked away from public use. Certain I am that their experience could not have guided the board in the utter confusion of organisation in regard to medical officers of health. They have been appointed without any system. Some have a small parish to attend to, others have a thousand square miles. The last are appointed for combined districts, but are managed by uncombined authorities, and have neither assistants to aid them nor power to enforce their decisions. The officers of health are without any definite rule for obtaining available knowledge of prevailing sickness, even when it is treated at the public expense within their own districts; and they are not, universally at least, informed of the deaths as they occur. The medical officers of health have been appointed without any examination on their knowledge of State Medicine, and in the majority of cases they do not possess this knowledge. I am perfectly certain that this utter confusion could not have resulted had the Local Government Board consulted the experienced State medical officers belonging to them. This distrust of the doctors in higher administration is simply a general mistrust of science. And the time has now arrived when science must be trusted in government. Science is entering into the higher education of the country, and the prejudice against it among legislators, who were educated in classical universities, will in time be removed. For the progress of a country depends upon the progress of science, and the welfare of a nation is secured by the most intelligent application of science to its manufactures and to its government. The health of the country—and that governs the productive power of its people—depends as much upon the applications of medical science as the working of a machine depends upon a good application of mechanical laws. To trust the whole administration of Health Acts to Poor-law inspectors and lawyers is an amazing example of unbelief in the first principles of the laws of health. The well-being of the people depends upon physical causes, which, when intelligently understood, mean physical science, and the trained physician is the natural and most intelligent agent for extending its knowledge and application to the prevention of disease.

"What we want in the future is not new law, but more efficient administration of existing law. To heap up new sanitary law on the decaying mass of indigested sanitary law which already forms a dismal agglomeration, is like the practice of our ancestors, who thought that a few clean rushes, thrown upon the corrupt mass of foul rushes on the floor, sufficed for sanitary purposes. What we want is superior organisation and efficient administration of existing law. But, in our happy-go-lucky style of government, are we likely to get it? I doubt whether it will be wise to continue the local government as a separate department of the State. Its functions, in reality, appertain to the Home Office, which, when properly organised, should divide itself into two great departments—the one dealing with police and justice, the other with the physical interests of the people. One Secretary of State might have the supreme responsibility, but each of the divisions should be scientifically administered. It would be as absurd to put a man trained in physical science at the head of the branch of police and justice as it is to put a man merely trained in law in charge of the physical interests of the people. It is an exploded fallacy that only lawyers are good men of business, and that scientific men are not. Is my friend Sir John Lubbock a worse banker because he is an eminent man of science? Is Mr. Spottiswoode a worse printer because he has distinguished himself as a physicist? Is Mr. Warren Delarue a worse stationer because he is equally conspicuous as an astronomer and as a chemist? The local government of the country, in as far as it relates to the physical interests of the people, will remain an example of arrested development unless science receives a recognised position in its administration. Now, the Local Government Board is drifting into the position of a large and responsible ministry dealing with the physical interests of only one portion of the people, and having no imperial object or comprehensiveness; for, though it includes England, it excludes both Scotland and Ireland."

PAPERS READ.

Mr. David Gibb read a paper on "The Relative Increase of Wages, of Drunkenness, and of Crime during the last Five Years in the Central Mining Districts of Scotland." Mr. Gibb said the industrial result of the unprecedently high rate of wages obtained between 1869 and 1873 had been almost wholly disastrous.

Dr. Alexander Robertson read a paper advocating further legislation for persons labouring under mental disorders resulting from or characterised by excessive indulgence in alcoholic liquors.

Dr. Yellowlees, of Gartnavel Asylum, read a paper on "The Criminal Responsibility of the Insane."

Dr. Andrew Fergus, of Glasgow, read a paper on "The Sewage of Towns and Disposal of Organic Refuse." He objected to the water system, and advocated the return of excreta to the earth.

Mr. Baldwin Latham, C.E., read a paper on "The Sewerage of Towns." The object of his paper was to reverse the preceding one—viz., to show the necessity of procuring water in abundance for all our large towns. After the water was procured, it must subserve all the purposes of removing the alvine discharges of the population as well as all the liquid refuse from slaughter-houses and manufactories. The dry system of collecting the alvine discharges had never been shown to be remunerative; the liquid portion of the sewage had also to be dealt with, and it was as difficult to purify that portion as if it contained alvine discharges.

Major-General H. Y. D. Scott, C.B., read a paper on "Legislation for the Restraint of River Pollution."

Bailie Morrison, Chairman of the Committee of Management of the Glasgow Improvement Trust, contributed a paper on "The High Rate of Mortality in Glasgow, with Observations on the Measures taken by the Municipal Authorities to reduce the same under the 'Glasgow Improvements Act, 1866,' and other Public Acts." The high death-rate in Glasgow was simply from a variety of causes—(1) the character and occupation of the population; (2) the impurity of the atmosphere; (3) density of population and overcrowding; and (4) infant mortality. In Glasgow, 3,085 houses had been demolished by the City Improvement Trustees, displacing an estimated population of 15,425; to provide for which, and the natural growth of the city, 26,974 houses had been erected within the municipal boundaries, from 19th June, 1866, to 31st August, 1874, which were estimated to accommodate 133,970. This did not include the numerous buildings in the immediate outskirts of the city.

The Rev. R. J. Simpson also read a paper on the same subject.

Mr. Simpson claimed special attention to the following four points in providing dwellings for the labouring poor.—(1) Let them be as convenient, or—to use their own expressive term—"handy" as possible to the work of the people; (2) Let them not be too much congregated into one faubourg or quarter, objectionable alike on social and on political grounds; (3) Let there be, if possible, in the buildings, or hard by, a good wash-house and a "crèche" or "infant nursery," in which to tend and guard the infants during the parent's absence at work, and thus enable the elder children to go to school; and (4) Let there be, if it can at all be secured, a playground or vacant space, where the children can play without the probability of being run over by a butcher's cart or contaminated by the lowest company of the streets.

The Rev. Dr. J. Elder Cumming contributed a paper on "The Neglect of Infants in Large Towns, with some Remarks on the Crèche System." He was not an advocate for having a large *crèche* of fifty or sixty children, but a number of small institutions, taking up district after district. The advantages which could be fairly claimed for the system were:—For the infants themselves, good and suitable food, sufficient warmth, shelter, and ventilation, constant cleanliness and medical care; and for the mothers, the effect had come to be that, accustomed to see their children in a state entirely different from what they had ever knew before, they made afterwards an effort to keep them so; and for the public at large, it might be hoped that an extension of the system would gradually lead to a great decrease of infantile mortality, and the rapid and decided improvement in the bodily condition and health of the children who were spared.

Mr. F. Fuller read a paper on "Our Paramount Duty to Provide Wholesome and Pure Recreation and Amusement for the People, and the Dire Results and Dangers which attend Neglect of It."

NOTES, NEWS, AND GOSSIP.

"Do you ever analyse blood?" said a cadaverous-looking individual to me one day at my office; "I can do it myself," he added. "I once took a scientific education in a high school, but I have no retort!" Thinking he meant dried blood, which is valuable for clarifying and other purposes, according to the percentage of soluble albumen it contains, I said "Yes." You may judge of my surprise when he informed me that, having been an invalid for twenty years, and trying in vain physicians of the various schools without relief, he was at last persuaded that his blood was deficient in some normal ingredient, or that there was lurking in it some subtle poison which the combined effects of even "sarsaparilla and iodide of potassium" and other "spring medicines," which he had absorbed in immense quantities, had failed to remove. He desired to have his blood analysed to ascertain the nature of the disease, and in the most innocent manner possible inquired how much blood it would take to make the experiment. The story is strictly true as to its main facts.—*The Laboratory.*

Sponge retained in Stump after Operation.

Le Mouvement Médical mentions the case of a man who entered a hospital in Paris with a large granulating ulcer on the stump of his leg, consequent on amputation four months previously, in the reign of the Commune. On examination, a sponge was found imbedded in the granulations. It had been applied as a hæmostatic in the amputation and carelessly left in.

Influence of Diet upon the Proportion of the White Blood-Globules.

Wilbouchevich concludes as the result of several observations upon anæmic subjects that "a purely vegetable diet has an evident effect upon the proportion of the white blood-globules," increasing them from the normal proportion of one to six hundred red globules to one to sixty-six and one to one hundred and thirty-eight.—*Le Progrès Médical*, June 20.

Saccharated Calomel contains Corrosive Sublimate.

Dr. Polk, of Philadelphia, in the *Medical Times*, calls attention to the fact that corrosive sublimate is developed when calomel is rubbed up with sugar. He administered ten grains a month after its preparation, with such poisonous effects as led him to test the compound, with the result as stated. He quotes from Valpius, who says: "When calomel is mixed in powder with white sugar, or calcined magnesia, or bi-carbonate of soda, corrosive sublimate is formed in twenty-four hours. Rather large quantities are formed in powders composed of calomel, white sugar, and bi-carbonate of soda." We believe it is the general opinion among practitioners that the increased activity of the saccharated calomel, which, by the way, is an old remedy, depends on the increase of surface caused by its diffusion. But the development of the chloride puts a serious face on the matter.

A Novelty in Post-mortem Examinations.

At a meeting of the New York Pathological Society (*Medical Record*), Dr. Janeway proposed a new method of examining the abdominal organs without opening the cavity. This was by the introduction of the hand per rectum, and bringing away any parts within reach. In one reported case the liver and kidneys had been satisfactorily inspected by this means, without violating the injunction of the friends not to open the body.

OBITUARY.

Blackstone.—On the 1st October, J. Blackstone, M.R.C.S.E., of Gloucester Road, Regent's Park, London, aged 73.

Blake.—On the 13th October, at Lorne Villa, Downend, near Bristol (late of Taunton), James Dore Blake, M.D., aged 69.

Duff.—On the 21st September, at Mandalay, India, C. M. Duff, M.D., Deputy Surgeon-General British Burmah Division.

Duffin.—On the 17th October, E. Willson Duffin, M.D., F.R.C.S.Ed., of Devonshire Street, Portland Place, aged 74.

George.—On the 8th October, Henry George, L.S.A.L., of Kirton-Lindsey, Lincolnshire, aged 72.

Havens.—On the 13th October, at Donyland Hall, Colchester, Philip Havens, M.R.C.S.E., aged 69.

Hunt.—On the 22nd September, Richard T. Hunt, M.R.C.S.E., of Disley, Cheshire.

Kirkwood.—On the 7th October, at Ayr Villa, Maida Vale, London, after a long illness, John Templeton Kirkwood, M.D., M.R.C.S., in the 63rd year of his age.

Lomax.—On the 16th September, H. I. Lomax, L.R.C.P.Ed., of Cheadle, Cheshire, aged 62.

Mann.—On the 21st September, C. W. Mann, M.R.C.S.E., of Bridlington Quay, aged 55.

Robinson.—On the 21st September, C. H. Robinson, M.D., of Stockport Road, Manchester, aged 32.

Rudge.—On the 8th October, Henry Rudge, Surgeon, of Leominster, aged 76.

Shiell.—On the 19th October, at Enniscorthy, Thomas Wildridge Shiell, A.B., M.B., T.C.D., L.R.C.S.I., Resident Medical Superintendent to the Wexford County Lunatic Asylum, eldest son of the late William James Shiell, M.D., of Clonmel.

Smale.—On the 7th October, G. E. Smale, M.R.C.S.E., of Wellington Road, St. John's Wood, aged 45.

Tate.—On the 23rd September, at Wallington Lodge, Fareham, Hants, George Ralph Tate, M.D., late Royal Artillery, aged 39.

Thompson.—On the 21st September, Robt. Thompson, M.R.C.S.E., of Theatre Street, Norwich, aged 63.

Tobin.—On the 20th October, at the Imperial Hotel, Torquay, of consumption, J. J. Tobin, M.D., of Waterford, aged 26.

Trotter.—On the 2nd October, at 53 Old Elvet, Durham, John Trotter, M.D., in his 70th year.

Vesey.—On the 8th October, J. Stewart Vesey, M.D., of Belle Vue, Magherafelt, aged 59.

Wilson.—On the 8th October, Frederick Wm. Wilson, M.R.C.S.E., of Forest Hall, Long-Benton, Northumberland, aged 80.

NOTICES.

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THE DOCTOR.

LONDON, DECEMBER 1, 1874.

Multum in parvo.

TO ALL
TO WHOM THESE PRESENTS MAY COME
WE, THE EDITORS OF THE DOCTOR, SEND
Greeting,

And make proclamation as follows: Firstof all—

To the
Immense Majority
of our Subscribers

who *have* paid their subscriptions we return thanks for the support with which they have favoured us during the last four years. In return it will be our endeavour to make The Doctor a yet more perfect record of the Progress of Medicine and the allied sciences. Secondly,

To the
Minute Minority
of our Subscribers

who have *not* paid their subscriptions we give notice that we are preparing a list of defaulters. This list we may dispose of in various ways—for instance, we may hand it to our solicitor, who will, no doubt, find means to make them defray his costs; or we may hand it to one of the trade protection societies, which would destroy the credit of every one whose name is there; or—and, as a preliminary measure, this is what we think of doing—we may hand it over to our printers as copy for publication in our columns. Such a course is not altogether without precedent, as an Italian contemporary has already adopted it. But we cling to the hope that the omission has been mostly through forgetfulness, and that those who have not paid will immediately remit to our Publishers the amount due, together with another six shillings for the coming year's subscription. Thirdly,

To those
who are not Subscribers
at all

we beg to suggest that they should become so, and thus, instead of seeing an occasional number, receive The Doctor regularly by post. By prepayment they may receive it post free for the published price—viz., Six Shillings per annum. We may also add that a few copies of the past volumes, each forming a year-book of Medicine at home and abroad, may still be had from our Publishers; but, as they are becoming scarce, orders should be given without delay. We have already been obliged to raise the price of the earlier volumes.

CHRONICLE.

MASSAGE.

Dr. Douglas Graham communicates to the *Philadelphia Medical and Surgical Reporter* a paper on Massage, read by him beforce the Massachusetts Medical Society. His remarks are so apposite that, whilst not agreeing *in toto* with all he advances, we will give a brief summary of his conclusions.

Massage is generally understood by the profession at large as synonymous with "rubbing," and a masseur is generally understood to be a professional rubber with more or less scientific knowledge; but this, according to Dr. Graham, is not its exact meaning. Massage is, according to him, a hygienic and therapeutic agent, consisting, not of friction, percussion, pressure, or movement alone, but of a permutation and combination of all these. The use of the word "rubbing" by medical men to convey the meaning of the term "massage" is highly injudicious—1stly, as giving rise to an inadequate conception of the nature of the method and of the effects which it is capable of producing; and 2ndly, as leading to the supposition that so simple a service can easily be rendered by any unskilled hand, from which, even if faithfully executed, little or no benefit would ensue, and even harm might follow. In the course of his paper Dr. Graham narrates several cases illustrating the uselessness, or worse than uselessness, of "rubbing," as commonly understood and ordinarily practised. In one case the patient, a lady who had sprained her ankle several times, had been diligently rubbed every day for three months without the slightest benefit having accrued; but after a few days massage she experienced great relief and benefit.

The *masseur*, unless he has some knowledge of physiological anatomy, will be likely to grasp and press upon the great arteries in their superficial course, and will also be likely to give unnecessary pain to the patient. He will mistake the origin of the more powerful muscles and the fascia lata for an abnormally rigid condition. He will not know how to malaxate the muscles in the manner that is most effective and most in harmony with the returning circulation—viz., from their insertion to their origin—1st, transversely to their fibres; 2ndly, obliquely; 3rdly, parallel to their course; and lastly, to finish by a gentle rotatory motion, equalising and combining the virtues of the previous three. The process should be begun with gentle friction, gradually increasing in force, and from the extremities to the trunk—that is, from the insertions to the origins of the muscles in all cases, so as to further the flow of the venous current, and, by thus mechanically urging the blood onward in its returning course, relieve, for the time, the forces which carry on the circulation. The skin will thus be rendered cooler. If a stronger *to-and-fro* friction be applied, heat will be generated, as is well-known. After friction sufficient to cool or warm a convenient portion of the surface, the massage proper may be begun. This is best done by not letting the hand slip over the skin while making pressure and movement, but by compelling the skin to move over the structures beneath. When there is a somewhat extensive effusion, from sprain or other cause, the massage should be begun at the upper part of the limb, with gentle fricin the direction of the venous current, so as to aid in emptying the engorged vessels nearest the trunk, in the first place, and thus make room for the passage of the effusion beneath; then, to proceed downwards, but still making the friction upwards, and with gradually increasing force. After applying friction for a few minutes, the the malaxation or kneading may be used, and, like the former, should have its greatest force in an upward direction, though still proceeding downward.

Dr. Graham speaks of the value of massage in sub-acute rheumatism—not in the acute stage, in which he thinks its use is contra-indicated, although he has heard of its having been employed, and with success—rheumatic gout, lumbago, sprains of various kinds—even when of long standing, hemiplegia, the essential paralysis of infancy, and many other affections. He gives several illustrative cases, which our space will not permit us to quote; but we commend his observations on the subject to the careful attention of English practitioners who wish to make use of scientific rubbing.

PYÆMIA.

In some notes of a lecture, published in the *Lancet*, Nov. 14, Dr. Moxon expressed the opinion that simple embolism, or purulent absorption, or general fever due to contagion, severally form distinct varieties of what is called pyæmia; but in many cases, perhaps the majority, all these conditions exist together.

PUERPERAL FEVER.

M. Dujardin-Beaumetz (*La France Médicale*, No. 84) mentions just having witnessed an epidemic of puerperal fever in the Pitié Hospital, in the same ward which for such a long time had been free from all epidemics. Five women died there since the 16th September. The wards were evacuated.

The origin of this epidemic was a woman who came from without, with a fœtid diarrhœa. This woman had just been delivered, at the moment when she entered the ward. All the women who were attacked after her were precisely those who were nearest to her.

M. Empis, who had been at the head of this service for a very long time, and who had been fortunate enough never to have had any epidemics of puerperal fever, asked M. Beaumetz if, in the fact he had just cited, he did not find one evident proof of the contagion of puerperal fever. He remembered at the same time all the precautions to which he had recourse to avoid this contagion. He took all precaution to cause extreme cleanliness to preside in the wards in all the work done for the women who had been delivered. He never left blood in the bed or on the linen of patients. He was most eager in procuring fresh air, and made the windows of the ward be kept almost always open. Finally, he never kept in the ward a woman who had become ill, however slightly. Any woman attacked with the slightest disease was at once transported into other wards of acute maladies. If we compare this method of M. Empis with that of his successor, we find notable differences which perhaps might explain to a certain degree the changes which afterwards took place in the sanitary condition of the ward. The physician, for instance, who immediately succeeded M. Empis, in place of continuing to exact the cases of cleanliness to which M. Empis attached such great importance, left, for the sake of experiment, during a certain time, linen stained with blood, and placentas even, in the patient's bed. This physician, besides, fearing the influence of the air on newly-delivered women, made the windows be closed. These are conditions very different from those to which M. Empis attributes the happy results he always obtained in this ward.

M. Bucquoy, in aid of M. Empis's views as to the contagion of puerperal fever, reported the following fact, of which he had been witness of late. A physician of the environs of Paris called him in consultation for a woman lately delivered, and attacked with puerperal fever. This was the third case of puerperal fever which the physician had observed since three weeks, and he had attended 800 labours without having had the slightest accident. Seeking the cause of this sudden change, he showed to M. Bucquoy that he was attacked with a suppurating gland of the neck, which he was treating by drainage.

M. Chauffard had long professed that all suppuration or disease which gives forth putrid gases near a woman in labour infects her. The service of women in labour at the Necker Hospital is very murderous, which he explains by the presence in that hospital of mothers, who are nursing, some of whom are affected with abscess of the breast, and of newly-born children often affected with purulent ophthalmia.

PATHOLOGY OF THE SYMPATHETIC NERVE.

Dr. Alexis Lubimoff, of Moscow, gives in *Virchow's Archives* for August, 1874, the results of his study of the diseased state of this nerve in about 250 corpses.

The main parts which were examined by Dr. Lubimoff are the supreme cervical ganglion, a few ganglia from the dorsal or lumbar portion of the nerve and the cœliac ganglion. It was observed by him that often only one side of the nerve was in a pathological condition, or that the pathological process was more advanced in the one than in the other side of the nerve. He directed his attention especially to the condition of the nervous elements, the connective tissue, and the circulatory system of the sympathetic. Dr. Von Petershausen has condensed the paper for the last number of the *Detroit Review*, from which we take the following points:—

A. Pathological changes in the circulatory system of the sympathetic.—There is a great difference in the distribution of blood to the vessels of the sympathetic. Parts of it may appear anæmic or injected, even ectasia or extravasations may be observed. If the vessels are empty, the ganglion appears white when cut; in cases of injection the colour of its surface, and on the cut, is red. The supreme cervical ganglion is often injected, and in cases of strong injection there may be noticed ectasiæ in the course of puerperal fever, and in typhoid fever. When the patients had been delirious during life, there could be found also extravasations in the same ganglion. Here arises the question, if such extravasations are in life connected in some way with the delirium. This is the more probable, as some authors have found, that *there is a connection between the supreme cervical ganglion and the vessels of the brain*, as in cases of extirpation of this ganglion the brain vessels become dilated.

A fatty degeneration of blood-vessels was found, to the greatest extent, in a case of poisoning by phosphorus. The walls of the vessels were dotted all over with little bright dots, in all ganglia, but especially in the cœliac ganglion.

An increased number of nuclei in the walls of the vessels were detected in cases of chronic hectic and some acute processes. A few times they seemed to be the product of proliferation of the nuclei.

In a case of Asiatic cholera the walls of the vessels, especially in the cœliac ganglion, were thickened.

An amyloid degeneration of the walls of the vessels seldom occurs in phthisis of the lungs, even if other organs, the spleen, the kidneys, are affected in such a manner. But it occurs oftener in cases of chronic suppuration of the joints or other organs, and sometimes in syphilis. In most of these cases the cœliac ganglion is affected, sometimes the whole sympathetic.

A metastasis in the blood-vessels was noticed under interesting circumstances. In a case of pyæmia, in another one of diphtheritis, and in a case of ulcerous endocarditis it was discovered that in the supreme cervical ganglion, and in the cœliac ganglion, a number of vessels were filled with a greyish granular substance. By close examination it was found that this was an aggregation of micrococci, which also appeared in the parenchyma of the ganglia.

B. Pathological changes in the connective tissue of the sympathetic.—These may concern the epineurium, which is the common capsula of the whole ganglion, or the perineurium, the capsula for some groups of nerve cells, or the endoneurium, the septa between the perineurium. The capsules have the appearance of broad stripes. They were found in the supreme cervical ganglion in a case of delirium, and in the cœliac ganglion in a case of liver cirrhosis. In children sometimes such a change of the cœliac ganglion is produced by pressure caused by enlarged lymphatic glands.

A proliferation of the nuclei of the connective tissue was observed in the endoneurium as well as in the capsule around each single nerve. They were sometimes much developed in the cervical, dorsal, and lumbar ganglia.

In a case of diffuse nephritis there was found a *fatty degeneration* of the elements of the connective tissue, consisting in an accumulation of fat drops around the nuclei of the connective tissue.

C. Pathological changes in the nerve elements of the sympathetic.—The author found that in adults the nerve cells of the sympathetic always contained pigment, which increased in amount with age. It often occupies so much of the nerve cells that their nuclei cannot be distinguished. In general, the degree to which the pigment is deposited depends upon the age of the person. It is not only found in the nerve cells and their appendages, but also in the connective tissue cells, often in great quantities. The doctor found pigment deposited in such a manner in the cœliac ganglion in a case of liver cirrhosis, and in the supreme cervical ganglion in a case of phthisis, and in progressive paralysis of the insane. In chronic hectic processes, in which at the same time many of the inner organs are affected, the nerve cells of all the ganglia appeared more pigmented, but in cases of typhoid fever the pigmentation of the cells was normal. If the pigmentation of the nerve and connective tissue cells is considerable, the ganglia appear dark grey on a cross cut as well as externally. In cases of carcinomatous affections of the intestines, a *fatty degeneration* in the nerve cells of the cœliac ganglion was rarely seen. Not oftener a *sclerosis of nerve cells* was observed. In diabetes mellitus this affection was noticed, especially in the cœliac ganglion.

The protoplasm assumed other qualities, and its outlines appeared distinctly marked. In the cells no nuclei could be observed, but many appeared pigmented. In Remak's fibres an increased number of nuclei was found, and in cases of fibrinous pneumonia with delirium they were observed in a state of fatty degeneration.

ALTERATIONS OF NERVES IN CONSTITUTIONAL SYPHILIS.

The following are the conclusions of Dr. P. Petron from his histological researches, published in *Virchow's Archives*, on the ganglionic nerves in cases of congenital syphilis:

(1) The general disorder of the organism in syphilis causes alterations of nerve elements and interstitial tissue in the system of the sympathetic.

(2) The nerve elements suffer independently of the interstitial alterations a pigmentary and colloid change.

(3) With the development of the interstitial processes in various organs, similar alterations also occur in the connective tissue of the sympathetic, whereby atrophy of the nerve fibres and cells takes place.

(4) The endothelium, which surrounds the nerve cell, likewise partakes in the disorder. Here the metamorphosis progresses as follows: In the beginning, with increase and proliferation of cells; later, passing into a retrograde (fatty) metamorphosis,

ABNORMAL IRRITATION OF OLFACTORY NERVE.

Dr. W. Sander (*Archiv. f. Psychiatrie*) describes the case of a man thirty-eight years old who complained of a horrible smell, coming on at the commencement of an epileptic attack and continuing throughout. Consciousness was not entirely lost. After his death, which occurred about a year after the onset of his malady, the post-mortem revealed, in the anterior part of the left hemisphere, a glioma which involved and destroyed the left olfactory tract.

A HANDY METHOD OF EXAMINING MORBID NERVOUS TISSUES MICROSCOPICALLY.

Dr. Batty Tuke proposes to overcome the great obstacle in the way of examining microscopically the tissues of subjects affected by disease of the nervous centres by a handy method of examining tissues without preparing specimens, or cutting, tinting, and setting up sections. The examination of fresh specimens of brain and cord is, he admits, an important part of a necropsy in such cases; but it must be confessed that the results obtained by squashing out small portions of nerve-tissue under a covering-glass have been in no small degree unsatisfactory, inasmuch as lesions of individual constituents have been extremely difficult of recognition; and further, in many cases, it has been found impossible to distinguish between morbid appearances and normal structures. This process has served to demonstrate fuscous degeneration of cells, and to suggest the presence of certain other abnormalities; yet an element of doubt must have often existed in the mind of the conscientious observer as to certain important points. Dr. T. (*B. M. J.*) thinks all doubts as to the actual nature of what one sees in fresh specimens can be obviated by adopting the following simple process.

Take a portion of nerve-tissue, about the size of a large pin's head, from a thoroughly defined locality, squash it out gently under a covering-glass on a slide, remove the covering-glass, and apply to the mass left on the slide a drop of "Judson's simple (aniline) magenta dye," diluted with eight drops of water; with a needle, mix the dye and the nerve-matter carefully, and cover the preparation with a clean covering-glass, again gently pressing it out to such an extent that light can pass through it. On submitting a specimen thus prepared to the microscope, it will be found that the cells, the nuclei of the neuroglia, and the blood-vessels, are beautifully tinted a deep crimson colour, leaving the other tissues almost unaffected. As far as my experience has gone, morbid products are also well brought into view, either by their ready absorption of the dye, as in the case of amyloid bodies, or by their refusal to take on the tint, as in the case of colloid bodies. Hæmatoidin accepts the colour all too readily, but the practised eye soon recognises its appearance. Pigmentary degeneration of cells is well shown, nucleus and nucleolus being thoroughly demonstrated; the poles can also be traced for long distances. A little practice will enable the observer to detect changes in the nuclei of the neuroglia, both as to their individual character and degree of proliferation. A specimen thus prepared presents many aspects more beautifully than can be obtained by the thinnest section I have been able to make; it can be viewed by the highest powers, and, moreover, an objection which has been raised by those who know little of the subject against prepared sections—viz., that the appearances presented by them may be the result of the "pickling" to which they have been subjected, is to a very great extent obviated.

While this process affords a handy method of examining morbid nervous tissue, it can only be advanced as such; it does not supersede sections; for, of course, the nerve-elements are not shown *in situ*. In order to render a post-mortem examination thoroughly satisfactory, the condition of the tissues must be studied in their relation one to the other: still, it is of no mean importance for the pathologist to be able to say definitely that the vesicular or nuclear elements of such and such a tract were demonstrated to be abnormal in kind or quantity. This can be done with considerable accuracy by the "handy process." In two hours, the pathologist can go over all the parts of a brain and cord, and, if he have any experience of the examination of nervous tissue by the section-process, and know his anatomy with an ordinary degree of accuracy, he can arrive at results of an important nature in a short time. But, if he desire to make assurance doubly sure, or to substantiate a theory as to the absolute nature of a case, he must prosecute his inquiries till he can view the lesions *in situ*, which, of course, entails microscopic sections. I may here remark *en parenthèse* that the most satisfactory results which I have been able to obtain in section-cutting have been by following Betz's method (*vide Journal of Mental Science*, October, 1873, p. 465). I have not yet made any experiments as to the best method of permanently preserving fresh specimens prepared by this handy method; but I believe that careful manipulation will enable them to be set up in glycerine. It is more than probable that this process will be found useful in the examination of other morbid tissues.

TOPICS OF THE TIME.

THE ACTION OF DRUGS.

I.

DURING the month the *British Medical Journal* has published several instalments of the Report on the Antagonism of Drugs made by the Committee appointed four years ago under the presidency of Prof. Hughes Bennett, who is the framer of the Report. This is one of the most important contributions to our knowledge of drugs, and the *Medical Press and Circular*, which is edited by one of our lecturers on materia medica, seems to have recognised the value of the Report, for it has fully analysed and commented upon it in several articles. From the Report itself in the *British Medical Journal*, as well as from the thoughtful criticisms of the writer in the *Medical Press and Circular*, we condense for our readers the most important parts, venturing here and there a few remarks of our own.

The Committee state that the object of the experiments was to ascertain by careful observation—

> 1. The physiological actions produced.
> 2. The minimum fatal dose.
> 3. The influence of one supposed antagonistic substance on the physiological action of the other when both were simultaneously injected.
> 4. The influence of the supposed antagonistic substance when introduced some time *before* the fatal one.
> 5. The influence of the supposed antagonistic substance when introduced some time *after* the fatal one.
> 6. The limits of the antagonism when such existed.
> 7. The performance in all cases of a crucial test consisting, when any supposed antagonistic action had saved the animal, in injecting the same dose of the active substance into the same animal a week or ten days afterwards. If death then took place, it was held that the two substances were antagonistic.

By such a method they hoped to ascertain, beyond the possibility of doubt, whether one drug could really antagonise the fatal or injurious properties of another, choosing in the first instance, for experiment, such as exhibited the most powerful and unequivocal action. In this manner there have been investigated, during the four years over which the Committee's labours have extended, the antagonistic properties existing between—

1. Hydrate of chloral and strychnia.
2. Sulphate of atropia and Calabar bean.
3. Hydrate of chloral and Calabar bean.
4. Hydrochlorate and meconate of morphia and Calabar bean.
5. Sulphate of atropia and meconate of morphia.
6. Meconate of morphia and theine.
7. Meconate of morphia and caffeine.
8. Meconate of morphia and guaranine.
9. Meconate of morphia and infusion of tea.
10. Meconate of morphia and infusion of coffee.
11. Extract of Calabar bean and strychnia.
12. Hydrate of bromal and atropia.

The objects aimed at are exceedingly useful; but we agree with the *Medical Press* that it is to be regretted that in the majority of cases rabbits were chosen as the subjects of experiments; as these animals are evidently particulary ill-suited for the purpose.

Twenty experiments were made on rabbits to ascertain the minimum fatal dose of hydrate of chloral, and the conclusion arrived at was, that twenty-one grains of this drug may be regarded approximately as the minimum fatal dose for a rabbit of 3 lbs. weight. Professor Bennett, moreover, adds that—

> At the same time, it has been observed, both in this research and in others in which chloral hydrate was employed as a hypnotic, that not unfrequently a dose, which in the great majority of instances is not ordinarily fatal, may destroy life. This is a fact of considerable practical importance, and might be explained by the supposition that, in certain conditions of the blood or tissues, chloroform may be produced more rapidly than usual by the action, according to the theory of Liebreich, of alkaline salts in the blood on chloral hydrate. The effects produced by chloral hydrate are now so well known as not to require special description. The period of hyperæsthesia is well marked in the rabbit. Frequently a slight pinch will cause the animal to utter prolonged screams, which would not be so occasioned in the normal condition.

Next fourteen experiments with strychnia indicate that—

> The minimum fatal dose for rabbits of that drug is 1-96th of a grain for every 3 lbs. weight of animal, or 1-288th of a grain for every pound. Here also it must be understood that the fatal dose is to a certain extent approximative; for in several instances animals died from a smaller dose, apparently from asphyxia produced by strong tetanic convulsions of the muscles of respiration.

Having thus determined the minimum fatal dose of the two substances, the action of both together was next investigated.

Influence of Hydrate of Chloral on a Fatal Dose of Strychnia when both are given simultaneously.

Professor Bennett concludes from twenty such experiments that chloral antagonises fatal doses of strychnia, and modifies the symptoms to a remarkable extent; while from eleven other experiments, in which the chloral was given after the strychnia, he concludes it is less efficient in counteracting the fatal effects of strychnia in proportion as it is administered at more distant intervals of time; while fifteen experiments in which the chloral was given some time previously to the strychnia, lead him to conclude that strychnia is not such a satisfactory antagonist to chloral as might have been expected. Professor Bennett adds that—

> It was also observed that, in those cases in which the animals died notwithstanding the injection of strychnia, they died in profound coma, although, from the muscular twitchings and from the ease with which reflex spasms could be excited, it was evident that the strychnia was physiologically influencing the spinal cord. It would appear, therefore, that there is little hope of saving life after fatal doses of chloral hydrate by the subsequent injection of strychnia. Chloral hydrate acts, not only on the centres of the spinal cord, but also on the brain, as is evidenced by the profound coma following a large dose, and the in-

jected condition of the membranes of the brain found after death. Strychnia, on the other hand, exercises no known influence on the brain; and, although it may stimulate the reflex centres of the cord, depressed in vital activity by the action of chloral hydrate, it cannot relieve the condition of the encephalon, and consequently, even though there may be muscular twitchings and even tetanic convulsions, the animal dies comatose.

Thirty similar experiments were made upon rats, from which similar conclusions were derived.

Professor Bennett thus sums up:—

It appears to be established from these experiments—

1. That, after a fatal dose of strychnia, life may be saved by bringing the animal under the influence of chloral hydrate.
2. That chloral hydrate is more likely to save life after a fatal dose of strychnia than strychnia is to save life after a fatal dose of chloral hydrate.
3. That, after a dose of strychnia producing severe tetanic convulsions, these convulsions may be much reduced, both in force and frequency, by the use of chloral hydrate, and consequently much suffering saved.
4. That the extent of physiological antagonism between the two substances is so far limited, that (1) a very large fatal dose of strychnia may kill before the chloral hydrate has had time to act; or (2) so large must the dose of chloral hydrate be to antagonise an excessive dose of strychnia, that there is danger of death from the effects of chloral hydrate.
5. Chloral hydrate mitigates the effects of a fatal dose of strychnia by depressing the excess of reflex activity excited by that substance, while strychnia may mitigate the effects of a fatal dose of chloral hydrate by rousing the activity of the spinal cord; but it does not appear capable of removing the coma produced by the action of chloral hydrate on the brain.

It is scarcely necessary to point out the vast importance of these results to practical medicine and the indications they afford, not only in cases of poisoning by strychnia, but in cases of tetanus and other spasmodic diseases, reflex and central.

At a meeting of the Medico-Chirurgical Society of Edinburgh, on April 6th, 1870, and at the annual meeting of the Association at Newcastle in 1870, I demonstrated experimentally with what certainty rabbits might be saved after receiving a fatal dose of strychnia, by the injection of a solution of chloral hydrate. Take two rabbits of about 3 lbs. weight; inject under the skin of both 1-96th of a grain of strychnia, and then in one a solution of fifteen grains of chloral; in ten minutes the first one will leap into the air and fall down tetanic and dead; the other will go to sleep, and in about two hours will wake up as if nothing were the matter. A more certain antidote does not exist.

In spite of this experiment, we agree with the *Medical Press*, that we should hesitate to trust to this antidote in man, for we ought never to forget that the toxic effect of strychnia would be produced more rapidly, and with smaller quantities, on man than a rabbit, while it would be scarcely possible to bring the patient under the influence of chloral in sufficiently short time—in fact, would it not be preferable to give chloroform at once, and keep the patient under its influence until the poison be eliminated? And it must never be forgotten that, in almost all cases of accidental poisoning, the poison has been taken a considerable period before it is possible to administer any antidote.

II.—Calabar Bean and Atropia.

Professor Bennett details various experiments with Calabar bean and sulphate of atropia on rabbits. In one a rabbit weighing 4 lbs. died in nineteen minutes after ½ grain of atropia, while another one of same weight recovered after taking the same quantity; also one weighing 3 lbs. 7½ ozs. recovered after taking ½ grain. Experiment 133 shows that a rabbit weighing 3 lbs. 8 ozs. died in seventeen minutes after 6 grains of atropia, while (Experiment 143) one of same weight recovered after taking 18 grains. Referring to these facts, the *Medical Press* quotes Harley's "Vegetable Neurotics," and Burness and Mavor's "Specific Action of Drugs," to the effect that 1-48th of a grain to 1-24th of a grain produces physiological effects in a dog, and 1-12th of a grain in a horse, and 1-120th to 1-96th of a grain in man; yet Prof. Bennett states that up to four or four and a half grains no symptoms whatever could be observed in rabbits. "With from four to six grains, there occurred dilatation of the pupil; uneasiness, as manifested by the rabbit moving restlessly about; respirations reduced; and the cardiac impulses were accelerated in number. With from six to fourteen grains, in addition to the symptoms noted above, there were, paralysis, more marked in larger than in smaller doses; slight quivering of special groups of muscles; violent starts of the whole body; and a drowsy condition. With from fourteen grains to twenty-one grains—the minimum fatal dose—in addition to the foregoing symptoms, there were increasing paralysis, and the respirations were reduced both in number and in depth. The animals died, in those cases in which fatal doses had been given, with severe spasmodic convulsive starts and twitchings. The action of the heart and the depth and frequency of the respiratory movements decreased until life was extinct."

Upon this the *Medical Press* says: "We see that weight has far less to do with the effect produced than the development of the nervous system; also, how the *symptoms* vary in different animals, for Dr. Harley (p. 201) says that in the dog the influence on the heart is more strongly marked than in the horse, while the cerebral effects are much less decided; moreover, in comparison of its size, the dog bears a much larger dose than the horse. However, all these experiments serve to show that certain drugs influence certain parts in *all* animals, although not necessarily producing the same train of symptoms in each."

There is another point to which the *Medical Press* very properly calls attention—viz., it is stated that three-quarters of a grain of extract of Calabar bean is the minimum fatal dose, and to antagonise this only three grains, and in one case four-and-a-half grains of atropia were given (Experiments 152-154). Yet it is stated (*vide* above) that 20 to 21 grains is the minimum fatal dose, and that four to six grains are required before any physiological effect is produced, and that with four grains no symptom whatever could be observed. Such being the case, it is difficult to see how one could expect (Experiment 152) four and a half grains of atropia to antagonise one and a half grains of extract of Calabar bean. The reason why such small doses were given is not stated.

Prof. Bennett remarks, in reference to Table 11 (which records the effects of Calabar bean and sulphate of atropia): —"It will be observed from this table that in one case (No. 148) the rabbit survived for five days. It was very ill for twenty-four hours; it then apparently became well; but on the fourth day it showed no inclination to take food, and on the morning of the fifth day it was found dead in its box. All the other cases died in periods varying from fourteen to sixty-two minutes after receiving the injection of Calabar bean extract. In every case life was prolonged by the use of the atropia, and the symptoms were modified.'

These statements are thus commented on by the critic of the *Medical Press*, whose comments we have already several times cited:—

"Yet it is a point worthy of note that one rabbit weighing 3 lbs. 8 ozs., after receiving half a grain of atropia and one grain extract of Calabar bean, was ill for twenty-four hours, and *only* died on the *fifth day;* while one weighing 5 lbs. received three grains of atropia and one and a half grains of extract of Calabar bean, and died suddenly, after seventeen minutes, with slight convulsions; and another, weighing 6 lbs., received four and a half grains of atropia and one and a half grains of extract of Calabar bean, and died in twenty-five minutes, with severe convulsions. Thus it would seem that, when the proportion of atropia was increased, death was hastened in proportion. And again, in

Experiment 161, to a rabbit weighing 3 lbs. 4½ lbs., one and a half grains of extract of Calabar bean, followed by three-quarters of a grain of atropia, was given, and death ensued in 100 minutes. Yet (Experiment 165) to another rabbit, weighing 3 lbs. 9 ozs., was given one and a half grains of extract of Calabar bean, followed by one grain of atropia, and here death ensued in *twenty-nine* minutes; and in Experiments 169, 170, and 175, only three-quarters of a grain of atropia was used with success to antagonise three-quarters of a grain of extract of Calabar bean. All these experiments would seem to indicate that where the atropia is given to antagonise Calabar bean in larger doses than three-quarters of a grain, death is hastened than if smaller doses were given.

"We comment on these points, for no notice seems to have been taken of them by the experimenters. These experiments at least serve to bear out Dr. John Harley's statements, for he says (p. 217) that in moderate doses atropia is a stimulant to the sympathetic nervous system and circulation, *but* in large doses diminishes the force and activity of the heart. Such being the case, we can quite understand life being prolonged by a small dose, as in Experiment 161, and hastened by an increased dose, as Experiment 165. This dual action of drugs seems to have been overlooked."

Professor Bennett records various experiments on rats, showing that the minimum fatal dose for a rat is from five to five and a half grains. He thus sums up:—

"It is evident that the antagonistic influence of sulphate of atropia on the effects of extract of Calabar bean is not nearly so well marked as that of chloral hydrate as an antagonist to the effects of strychnia. Even after the introduction of sulphate of atropia, the symptoms produced by the previously injected extract of Calabar bean continue to be well marked. The animal seems to be extremely ill. There are salivation, twitchings of the muscles, and perhaps slight convulsions. This state of things may continue for several hours, and the animal slowly recovers. In the case of strychnia and hydrate of chloral, if the animal be kept undisturbed, it may not exhibit a single indication of the presence of the strychnia, and it becomes roused from the effects of the hydrate of chloral as if it had received it alone.

"The experiments made on rabbits clearly show that sulphate of atropia does antagonise fatal doses of extract of Calabar bean, but within a very limited area.

"1. Sulphate of atropia antagonises to a certain extent the fatal action of Calabar bean.

"2. The area of antagonism is even more limited than Dr. Fraser has indicated in his paper already referred to.

"In all the experiments made in connection with this branch of the inquiry, it was found that so-called antagonism existed within very narrow limits. The danger was, not death by too great a dose of sulphate of atropia, the supposed antagonist, but death from the effects of the extract of Calabar bean. In this respect, there was also a marked contrast to the action of hydrate of chloral on the physiological effects of strychnia. In the latter instance, the danger evidently would be, in a case of poisoning by strychnia, to give too large a dose of hydrate of chloral; whereas, in the case of poisoning by extract of Calabar bean, it would apparently be very difficult to arrest its effects by sulphate of atropia, because a small dose of the latter produces little effect (at all events in rabbits), and the effects of the extract of Calabar bean are so violent as soon to destroy life. It results that, for all practical purposes, atropia, as an antidote of Calabar bean, is useless, and not to be compared with the effects of chloral hydrate, as shown by the committee under the next head."

III.—Calabar Bean and Hydrate of Chloral.

The experiments made as to the antagonism between these drugs, Professor Bennett thinks, "show that, if hydrate of chloral be given before extract of Calabar bean, so that the animal is deeply under the influence of hydrate of chloral before it receives the extract of Calabar bean, the symptoms of the latter are much modified, and life saved from the effects of what would otherwise be a fatal dose. On the other hand, chloral hydrate is of comparatively little service as an antagonist to extract of Calabar bean if given some time after the latter. The reason of this is quite evident. Extract of Calabar bean produces its more severe physiological effects ten or twelve minutes after the administration of the fatal dose. In some cases the effects occur even sooner. On the other hand, a rabbit is not deeply under the influence of hydrate of chloral until fifteen or twenty minutes after it has been given. If the effects of extract of Calabar bean appear before those of hydrate of chloral, they usually run quickly to a fatal issue, because the antagonist, hydrate of chloral, is not acting with sufficient vigour to restrain them."

A little further on we are informed that "even in those animals deeply under the influence of hydrate of chloral into which a fatal dose of extract of Calabar bean has been subsequently introduced, we do not find a complete absence of the symptoms referrible to the presence of extract of Calabar bean. *There are still twitchings and startings, tremors, salivation, contracted pupil, &c.* (The italics are ours). But, on the other hand, the tendency to death by convulsions is obviated. If the animal be kept quiet, with a free circulation of air around it, it may recover. Cases of death after the introduction of both substances are to be referred to pulmonary congestion and the accumulation of fluid in the air-passages."

After this we confess to amazement that the learned Professor sees in chloral an antidote to Calabar bean. This amazement we have the less hesitation in expressing, since it is evidently shared by the critic we have so often cited. Prof. Bennett says:—

"From these experiments, it is evident that, in the action of chloral hydrate and extract of Calabar bean, we have a good example of physiological antagonism (!!). This antagonism is, however, limited, as in all such cases, by two conditions: 1. *By the doses administered.* More than a minimum fatal dose of extract of Calabar bean destroys life, notwithstanding the administration of chloral hydrate. 2. *By the interval of time between the administration of the two substances.* There is a great probability of saving life in those instances in which both substances are given almost simultaneously. This probability is diminished if the chloral hydrate be given five or eight minutes after the extract of Calabar bean; while there is no chance at all if the chloral hydrate be given *more than eight minutes (!)* (italics ours) after a fatal dose of extract of Calabar bean. But even in those cases in which death occurs after the introduction of both substances, the effects of the Calabar bean are much less marked."

And this is what his critic in the *Medical Press and Circular* says:—

"Thus it is evident that, if the chloral hydrate be given more than eight minutes after a fatal dose of extract of Calabar bean, there is no chance at all of saving life. Such being the case, it is very doubtful if chloral would be of much practical value in the treatment of a case of poisoning in man by Calabar bean. And here again we incline to believe that the immediate inhalation of chloroform would be as efficacious, if not more so; it might be supplemented by the subcutaneous injection of chloral, so as to keep the patient some time under the influence. That the symptoms produced by Calabar bean are modified to a great extent when chloral is given first, and but slightly, if at all affected when the Calabar bean is given previously, we can quite understand when we remember Professor Fraser's experiments, showing that Calabar bean destroys the reflex functions of the cord, and eventually the conducting power of the nerves, which function chloral is evidently powerless to restore; in fact, chloral, through its primary action on the blood, depresses the reflex activity of the cord, and, if given first, only delays or prevents the *manifestation* of the action of the Calabar bean, simply because both drugs influence the same part. We must also bear in mind that, whereas, on the one hand, the Calabar bean exerts its influence almost immediately on introduction into the body (for in Experiment 119 a rabbit, after one and a-half grains, died in seven minutes), whilst, on the other hand, chloral (accepting Liebreich's theory) cannot commence to act till it has met sufficient alkali to decompose it, and thus set the chloroform free ; moreover, the interval between the giving of the chloral and the development of its effects is most uncertain, and as yet it is difficult to say by what circumstances influenced, M. Byasson saying that the difference in the physiological phenomena is explained by the intervention of formic acid, produced at the same time as the chloroform, and acting under special conditions, while M. Personne believes the combination of chloral with albumen explains the longer duration of the action of this body compared with chloroform."

IV.—Morphia and Calabar Bean.

Professor Bennett details the results of various experiments undertaken to ascertain the antagonism between hydrochlorate and meconate of morphia and Calabar bean. In the first place, nineteen rabbits were experimented on with hydrochlorate of morphia, to ascertain the minimum fatal dose, which the Report estimates as *twelve grains* for a rabbit weighing 3 lbs., and states that "the predominant symptoms preceding death by a fatal dose were as follows: restlessness, contraction of the pupil, muscular twitchings, forward movements, convulsions, at first clonic, afterwards tonic—frequently at first there was a tendency to bending of the body forwards (emprosthotonos), but always before death there was opisthotonos, that is, bending backwards." In the next place, ten rabbits were experimented with to ascertain the minimum fatal dose of meconate of morphia, and the conclusion arrived at was that about ten grains was the minimum fatal dose, the difference between the hydrochlorate and meconate being probably due to the superior solubility of the latter. Ten rabbits were then taken to test the question of the antagonism of morphia and Calabar bean. In five cases hydrochlorate, and in five meconate of morphia was given first, followed by extract of Calabar bean, and it was found that in all cases fatal results ensued. Professor Bennett therefore concludes that these morphia salts are not antagonistic to Calabar bean. We accept this conclusion. Indeed, we might go further ; for when less than the fatal dose of each drug was given, the result was death, clearly proving that these drugs are the opposite of antagonists to each other.

Morphia and Atropine.

The experiments made by the Committee on these drugs were numerous, and confirm those of previous observers ; indeed, we may fairly say they place our knowledge of the actions of these drugs on a firm foundation.

The inferences drawn by Professor Bennett from the experiments on rabbits, are the following :—

"1. Sulphate of atropia is physiologically antagonistic to meconate of morphia within a limited area ;

"2. Meconate of morphia does not act beneficially after a large dose of sulphate of atropia, for in these cases the tendency to death is greater than if a large dose of either substance had been given alone ;

"3. Meconate of morphia is not specifically antagonistic to the action of sulphate of atropia on the vaso-inhibitory nerves of the heart ; and

"4. The beneficial action of sulphate of atropia after the administration of large doses of meconate of morphia is probably due to the action sulphate of atropia exercises on the blood-vessels. It causes contraction of these, and thus reduces the risk of death from cerebral or spinal congestion, as is known to occur after the introduction of fatal doses of meconate of morphia. It may also assist up to a certain point, not precisely fixed in these experiments, by stimulating the action of the heart through the sympathetic, and obviating the tendency to death from deficient respiration observed after large doses of morphia."

ABOUT BOOKS.

Autobiography of A. B. Granville, M.D., F.R.S.: being Eighty-eight Years of the Life of a Physician. Edited, with a Brief Account of the Last Years of his Life, by his youngest daughter, Paulina B. Granville. Two volumes. London : Henry S. King and Co. 1874.

These two handsome volumes contain the record of a most eventful life, for Dr. Granville practised his profession in Italy, Greece, Turkey, Spain, Portugal, the West Indies, Russia, Germany, France, and lastly, in England. The Doctor was, in fact, by birth an Italian, his name being originally Bozzi, and in Italy he took his M.D. at the age of nineteen. To escape the conscription he joined a dramatic troupe, and was thus enabled to embark for Greece, where he mastered the language. Thence he accompanied an English gentleman to Constantinople, where he became a surgeon on board the Turkish fleet, and in this capacity visited Acre and Jerusalem. He afterwards became supercargo of a Venetian polacca, and visited Smyrna, Messina, Malaga, Granada, Seville, Cordova, Gibraltar, Madrid, and other places in Spain, and subsequently in Portugal, where he sees the opportunity of becoming assistant-surgeon to an English war-sloop, *The Raven*. He was allowed to pass his examination at Haslar in Latin ; but he soon conquered English, and in 1809 became a Member of the Royal College of Surgeons of England, married an English lady, joined the Freemasons, and from that time forward may be regarded as an Englishman. In 1811 appeared his first literary work in England, being fine essays on the performances of John Kemble, and are very remarkable, considering that five years previously he knew nothing of the language. At the end of 1812 he left the Naval Service, and eventually he became a physician in London. He mixed with a great number of the leading political and literary men of his day, and his autobiography is crowded with interesting anecdotes about them.

On first coming to London he studied at the Westminster Hospital for some time, and tells the following story about

Mr. Carlisle.

Mr. Carlisle, one of the surgeons of the hospital, having remarked how desirous I was to enter deeply into the theory and practice of anatomy, as well as surgery, suggested to me that I should take up my abode at his house in Soho Square as a "house pupil" for six months. An experience of three months proved so unsatisfactory to both of us that we agreed to return to our former status of teacher and pupil at the hospital only. I know not whether there be any hereditary eccentricity in the name of Carlisle or Carlyle (no matter how spelt), as the works of some authors of that name would lead us to suppose ; but my Carlisle, afterwards Sir Anthony, unquestionably had a right to that distinction, irrespective of the spelling, whether as regarded his doctrines or some of his acts. One morning, coming down to breakfast, I discovered under my folded napkin a phial inscribed "a black dose." I stared at my host and professor with a look of inquiry. "It is the seventh day of the moon," he said, "on which everybody who desires to enjoy health and live long should give a scouring to his alimentary canal." Of course, I begged to be excused. He would often come down dressed without a waistcoat, which he had forgotten ; and not unfrequently we would meet him out of doors, or coming into the hospital, with two half-gaiters of different colours, or with both gaiters on the same foot.

In 1814 he became Lecturer on Chemistry at the Westminster Hospital Medical School. In the course of his lectures he met with the following unfortunate

Accident with Chlorine.

I had prepared and carefully collected, in the presence of my class, a considerable volume of chlorine gas in a globular glass vessel, when the assistant on my right hand had occasion to pass something over to "George," whose fat hands were too clumsily shaped to keep fast hold of the proffered object. It fell into the glass recipient, breaking it, as a matter of course, and releasing the imprisoned gas, which went straight into the nostrils of the lecturer, who thereupon fell like a lump of lead to the ground, alarming not a little the whole class, which happened to be numerous. The first who rushed to my assistance raised and placed me on a chair, windows were thrown open, cold water was poured on my head, liquid ammonia exposed under my nose, and a glass of brandy poured down my throat—the whole process ending in my recovery, but completely deprived of my sense of smell, which I have never recovered since. Some readers may feel disposed to exclaim, "So much the better for you, Doctor, who will have to go through so many unsavoury matters." "True! but how much more shall I miss the smell of the rose!"

I shall only add another trifling physiological fact, from its curiosity, and also because I have never been able to explain it to my satisfaction. It was about ten years after the chlorine accident, and of the deprivation of my sense of smell, that driving with my wife towards Harrow, and while passing what were then fields celebrated for carpet-beating, but now crowded with houses and streets, I became suddenly sensible of the delicious smell of new hay, which was in the process of being made that day. I pulled up my horse, and remained some time perfectly enchanted with delight (I don't exaggerate) at my recovered sense. We remained nearly an hour motionless, and I drove off towards Harrow, proposing to come back the same way at sunset, hoping to enjoy again the same delicious sensation. In this, however, I was disappointed; nor have I ever enjoyed it since.

Dr. Granville introduced the use of hydrocyanic acid into England, and was the first to recommend its use in certain complaints. He was the first medical man who performed ovariotomy in this country. When Dr. Granville first landed at Constantinople he caught the plague, then prevalent, but fortunately recovered. Apropos of the occasion, he relates the following story of

Dr. Valli.

An Italian physician, named Eusebio Valli, arrived at Constantinople with the determination to inoculate himself with matter from a plague bubo. Some of this he first mixed with vaccine matter, asserting that the virulence of the disease would be effectually extinguished, or, at all events, so much modified that the patient would pass through the ordeal with impunity, and thereby become protected from any other seizure, on the assumption that the plague would affect man only once in his life-time. Dr. Valli made an incision in his left thigh, and inserted some of the mixture, rubbing some also on the ball of one of his thumbs. A slight indisposition followed, accompanied by sores.

As the witnesses of the experiments had expressed their scepticism as regards the genuineness of the plague matter employed, Dr. Valli was induced to repeat the experiment in the Plague Hospital of the Seven Towers. Here he employed the real and undiluted pestilential virus, fully convinced was he that by his previous experiment he had rendered himself invulnerable. Soon, however, was he shown the futility of all theories when opposed to facts, for he had scarcely been in the hospital three days before he contracted the disease, though he fortunately recovered.

At Alexandria he heard the following story about Baron Larrey, which he thus relates:—

Baron Larrey.

I had an opportunity of conversing with a Frenchman who, during the war three years before, had served under General Menou, and who, being wounded, had been left behind in the hospital, to become afterwards domiciled, as was the case with many more. He gave me the following piece of information concerning the celebrated French Surgeon-in-Chief Larrey, which would seem to establish his claim to priority in the use of horse-flesh as human food before that which has since been set up by Parisian cooks, and still more recently by Napoleon III. My interlocutor asserted that, while lying ill in the hospital, he was, with the rest of the patients, supplied with delicious broth obtained from horse-flesh by direction of that great surgeon, with whom it was my good fortune to become well acquainted thirteen years after.

SPECIAL DEPARTMENT.

REPORT ON ELECTRICITY.

Mr. Symons, F.C.S., describes in the *Pharmaceutical Journal* a cheap and convenient galvanic battery, adapted for weak but continuous currents. Zinc plates are cut out of ordinary rolled zinc two inches square, with a narrow projection at top of three-fourths of an inch. Doubled round each side of these plates, and fastened with thread, are half-inch strips of fustian, or other stout cloth. Copper wire No. 20 or 24 is wound tight round each plate at intervals of one-eighth of an inch, leaving one and a quarter inch of wire free at the top. The fustian keeps the wire from touching the zinc. A series of ten of these plates, with blocks of wood about an inch thick between each pair, are tied tight together, and the projecting copper wire of each soldered to the next zinc, the terminal zinc and copper having each a wire projecting eight or ten inches. A thin strip of dry deal, of a suitable length, and about an inch and a quarter wide, has nailed round it narrow strips of deal a quarter of an inch square, so as to make a shallow tray. Into this tray is melted a mixture of shellac and resin. While this is still soft the ten pairs of plates, tied together with the blocks of wood, are turned upon it, so that the soldered joints are buried in the resin. In a minute or two the resin is hard, the blocks of wood can be removed, and the ten pairs of plates will be firmly fixed in the wooden tray, the terminal wires being passed through it.

The cells are made of extra stout tinfoil, or thin sheet lead, about three inches long, two and a half inches deep, and five-eighths of an inch wide, double folding the joint at the side, and also at the bottom, after neatly folding in the sides. The top sides of the cells are doubled back over thin strips of wood, about three and a half inches long. These metal cells can be more easily made on a wooden mould than paper ones, and when dipped into a mixture of melted wax and paraffin are impervious to liquids.

These cells are supported and effectually isolated by the projecting slips of wood resting on varnished strips of wood, placed across a box. Forty pairs of such cells may thus be placed in a deal box, 13 inches by 11 inches, and can be easily arranged by binding screws into a series of 10, 20, or 40 pairs, according to the requirements for quantity or intensity.

The liquid used has been one ounce of common salt in twenty-five ounces of water, and by occasionally replenishing the cells with a liquid of half this strength a nearly uniform current may be kept up for weeks or months. But as there is a gradual accumulation of an insoluble salt, I have more recently tried a dilute solution of zinc chloride.

From 20 to 40 pairs of this battery have been sufficient for the experiment described; but as they can be so easily constructed, and when placed in a series of boxes occupy so little space, any experimentalist may soon furnish himself with a series of some hundreds, to serve as a water battery. Of course, when the zinc plates are worn out, the trays and wires can be used again with fresh plates.

MEDICAL OPINION.

ALCOHOL AND ALCOHOLISM.

AGAIN and again have the topics that range themselves round alcohol called for a considerable share of our space. Lately we gave an account of debates and papers in America and on the Continent. Since then, England is the scene of conflict. This month the papers read before the British Medical Association have appeared in the *Journal*, and a public meeting has been held at Exeter Hall. We proceed to analyse first the papers, then the speeches. The first paper is by Dr. Russell.

ON ALCOHOLISM.

Dr. James Russell, Physician to the General Hospital, Birmingham, endeavours to show—*First*, that, in a not inconsiderable proportion of instances, symptoms of insanity actually precede the outbreak of intemperate habits. *Secondly*. The very marked quality of *periodicity*, which is a prominent feature in the best marked cases of the so-called dipsomania or oinomania, is clearly in accord with the well-known habit of the typical forms of nervous disease. *Thirdly*. The causes most generally assigned as leading to the formation of the habit of drinking imply the operation of influences which tend directly to produce cerebral or mental disease, or their actual presence. Such are insanity itself, cerebral diseases, sunstroke, blows on the head, hæmorrhages, nervous shocks, the commotion of the system attending the establishment of puberty, or connected with the climacteric period, &c. *Fourthly*. The marked moral degradation and intellectual failure which accompany certain forms of habitual drinking, and occur at an early period, bear similar testimony. *Fifthly*. An important position is held by *hereditary tendency* among the antecedent circumstances observable in the history of many of the patients. It was an Aristotelean maxim, to which the late Dr. Anstie gave his assent, that drunken parents beget drunken children.

Dr. Russell relates some cases that he has met with, and having shown the difficulty of detecting and managing them, refers to the sense of craving which forms so prominent a symptom in these unhappy cases, and which is unfortunately increased by the very means adopted for its relief. He says: I shall never forget the vivid description of the sensation given me by one unhappy victim; he literally wanted words to give effect to his account of its intensity, and the saddest part of all was, that he was well aware that a single dose of brandy and water would at once relieve him. Indeed, in no particular is the really awful tyranny exercised by alcohol so apparent as in its wonderful capability of giving relief to so many forms of nervous suffering, and in its standing so entirely alone in this respect. It is positively without a rival, unless in the equally harmful shape of opium or chloral; could we but find a harmless competitor with this autocrat, our difficulties were well-nigh over. Even in the very trouble which itself creates, in the tremors, the inability to eat, the sleeplessness, the depression which renders the interval of sobriety so hard to endure, alcohol is still all-powerful; and the day's drinking commences with the dose, or too often the repeated doses absolutely needful for the work of the day to be begun.

We may recognise the distinction between the morbid and the vicious form of drinking in the nature of this craving and in the means taken for its relief. The dissecting-room porter drinking soiled spirits, and the criminal priming himself with drink, "using it as he does a chisel," merely exemplify a degraded taste or a vicious intention; on the other hand, Porson drinking ink, a delicate lady swallowing hair-wash or turpentine, manifest the presence of a necessity for satisfying a neurotic sensation.

Connected with the causation of these morbid sensations, Dr. Russell says: These symptoms are doubtless forms of neuralgia of the organic nerves; as such, they are liable to be exaggerated by whatsoever increases the pain of ordinary neuralgia. Hence any cause liable to produce exhaustion, such as excessive work of body or mind, worry, anxiety, or lactation, should be carefully forbidden to anyone liable to give way to the indulgence in stimulants.

Further on the difficulty of dealing with such persons is discussed. There is, indeed, among many of the lower classes of patients, and in some of the higher classes also, a positive inability to recognise the habit of habitual drinking, sometimes through lowered moral sense, sometimes through defective education.

In many families, moreover, the fact of the existence of the vicious habit is completely concealed from the nearest relative. Thus especially wives will long succeed in concealing the practice from the husband. This ignorance, unhappily, is sometimes due to the very circumstances in the husband's life which may have led the wife to give way to the temptation to drink—his constant absence from home.

Nor is it without pertinence to mention the difficulty, or rather, perhaps, the uncertainty, which lies in the way of diagnosis; and how necessary it is to be on safe ground before acting in so delicate a matter.

ALCOHOLISM IN PRIVATE PRACTICE.

Dr. H. Sutherland, Lecturer on Insanity at the Westminster Hospital, relates some striking cases tending to prove that our code of laws is decidedly in a defective condition, when such patients are allowed to be at large, and to injure both themselves and their relatives by their habits of intemperance. In his first case, a young lady was bringing disgrace and ruin upon her parents and brothers by getting into debt and drinking to excess on every possible occasion. As she was of age, her father could not legally detain her; and, being sane, she was unfit for an asylum. In the second case, an old man was imperilling the prospects of his relations, and putting them into a continual state of alarm, by getting frequently intoxicated in public. He being the head of the family, they were afraid to offend him; and, as he was of sound mind and obstinate, they were compelled to keep him at home.

Dr. Sutherland thinks we have every reason to believe that there are many persons amongst the upper classes who are suffering from minor ailments, and are sowing the seeds of greater ones, by their ignorance of the use and abuse of alcohol. What is required for such persons is an establishment in which they could seek refuge until they had conquered their dangerous propensities, and where they would enjoy greater liberty and privileges than they could in a lunatic asylum. The patients might be of two classes, and in the same or in different institutions. One class should include such cases as those detailed above, who are absolutely ruining the prospects of their families by their bad habits, and who should be confined, whether they like it or not. The other class should consist of those who, feeling the necessity for surveillance, would voluntarily place themselves under the discipline and *régime* of asylum life.

Dr. Sutherland then enters into our social habits, and lays down rules of the amount that should be permitted as moderate. Our only objection to this allowance is that it seems too free. He says:—

"Alcoholic stimulants should never be taken in the morning before lunch. If one be obliged to do so habitually, it is certain that alcohol is gradually getting a hold on the individual which he will not easily throw off."

THE PHYSIOLOGICAL AND CHEMICAL ACTIONS OF ALCOHOL.

Dr. Thos. P. Lucas takes up this part of the subject with vigour. The school of Baron Liebig asserts that alcohol is entirely burnt off in the body as carbonic acid and water or acetic acid and water. Another school asserts that such is not the case, but that the whole, or nearly the whole, of the alcohol passes off from the body unchanged. Dr.

Dupré has recently conducted a careful series of experiments, in which he appears satisfactorily to prove that only a small percentage of the alcohol taken could be again collected from the various excreta. Dr. Subbotin, on the other hand, gave a large quantity to some rabbits and re-collected a large percentage from the breath and urine. Dr. Lucas says: "Doubtless, both gentlemen were correct in their experiments, but the two series were not equal. Dr. Dupré gave small quantities to men; Dr. Subbotin large quantities to rabbits. Alcohol, to be burnt off from the body, must unite with oxygen, which chemical change could not take place, unless as rapidly as oxygen was available. There is a vast difference between the respiratory viscera of a man and of a rabbit, consequently a much larger quantity could be burnt off in the body of the former than in that of the latter. The quantity given by Dr. Subbotin to the rabbits was excessive; hence he re-collected some of the alcohol, simply because it would be passed off with the excreta mechanically. Remaining unconsumed in the general circulation, owing to a lack of oxygen sufficient to burn it off rapidly, it would pass off mechanically, just as any of the watery part of the blood might, only, as proved, at about one-fifth the ratio that water does."

Dr. Edward Smith endeavoured to show that alcohol passed off unchanged; but, as Dr. Dupré pointed out, there is an acid in the urine which acts to the chromic acid test in a similar manner to alcohol; hence, it is necessary, to secure accuracy, in the first place to make check experiments. Dr. Smith does not seem to have noticed this."

Dr. Lucas holds to the correctness of Dr. Dupré's experiments, and the conclusions at which he arrives, and he goes on to assert that the double action of alcohol as a stimulant and narcotic is against reason.

Dr. Anstie considers it a stimulant in small doses and a narcotic in large. Dr. Edmunds considered it a narcotic. He accounted for the stimulant or excitor symptoms as merely "a play of the coarser faculties let loose by the narcotisation of those finer sympathies which are designed to govern and regulate the others." "This," says Dr. Lucas, "is certainly an ingenious method of meeting a difficulty. Because Disraeli and Gladstone pour out effusions of eloquence and become excited in the effort, are those outbursts simply the play of "coarser faculties let loose" by means of some narcotic acting on the *finer sympathies* of their nature? Because a man's appetite is keen, does it but show a falsehood, and implore nothing but the abstinence from food? According to Dr. Edmund's theory, all narcotics narcotise, but all stimulants merely cause a play of deceptive phenomena."

What, then, is the action of alcohol? Dr. Lucas maintains that it is *a pure stimulant*. "It flushes the face, reddens the ears, stimulates the trigeminus nerve, warms the body generally, and stimulates the animal passions, even beyond the control of the will. If given in large enough doses, it stimulates to death. Thus, when a person takes a large amount, *e.g.*, a quart of brandy or rum at a draught, the probability is that he will fall down dead, not from the shock, as commonly supposed, but stimulated to death, all the nerve-power being at once stimulated or called into play. Thus the person dies from the exhaustion of nerve-force.

"There are, however, other phenomena resulting from the administration of alcohol. These are the narcotic effects—stupor, sleepiness, drunkenness. They are not the result of the direct action of the alcohol, but are induced by the accumulating carbonic acid and impurities in the blood of the drinker, consequent on the decomposition of the alcohol. The same symptoms occur if a person descend into a sewer or deep well loaded with carbonic acid. I stimulated a cat to death with ammonia. The phenomena exhibited were essentially those of increased vitality—inflammation of the eyeballs, pneumonia, inflammation of the brain-membranes, and inflammation of the skin to such a degree that it peeled off. Such were the results of the stimulus. The pneumogastric nerve was stimulated to such a degree as to contract the muscular fibres of the heart, so that the chambers were kept permanently empty; the result was death. Stimulant action always draws out latent nerve-power, provided such be present. Thus the phenomena exhibited are those of strength, whereas narcotic effects are precisely the opposite."

He holds that the apparent contrary effects produced, on the administration of alcohol, result from different causes. "The stimulant is produced by the alcohol; the narcotic by the carbonic acid. These two series of phenomena are going on at one and the same time in a varying ratio, according to the amount of decomposed or undecomposed alcohol. These different actions are consequent on the operation of two series of nerves, the cerebro-spinal being essentially excitor and the sympathetic essentially depressor. All medicines which stimulate or call into play vital actions act by means of the cerebro-spinal nerves, whereas all medicines which narcotise or depress, as aconite, opium, chloroform, &c., act by means of the sympathetic nerves. To counteract a severe stimulus to the one series of nerves, it is necessary to stimulate to a higher degree the other series. Thus, when a gall-stone is passing through the ductus communis choledochus, a person may take as much opium as would ordinarily poison before he gets relief. The result of the experiments on antagonistic medicines by Dr. Hughes Bennett is easily explained on this doctrine. Looked at in this light, narcotism or drunkenness is the safety-valve of the drinker. Were it not for such, every habitual drinker would sooner or later be stimulated to death."

"In studying the action of alcohol, I have observed another law, which accounts for several of Dr. Bennett's experiments—viz., that medicines which act upon different portions of the same series of nerves counteract and modify each other. Thus atropine and morphia, alcohol and strychnine, modify each other. Alcohol will instantaneously relax the spasms in cases of strychnine poisoning. Great care is necessary in this experiment not to give an overdose of the alcohol, lest the animal die. After stimulating a cat to a high degree with alcohol and strychnine (three grains), I failed to cause it much inconvenience by strong ammonia. It merely carelessly moved its head aside from the stimulant, and leisurely walked to another part of the room."

The action of alcohol, according to Dr. Lucas, is to stimulate the origin of the pneumogastric nerve, and the adjacent parts of the brain. If pushed to excess, it stimulates the nerve-currents so severely towards that point as to subtract them from the spinal cord from below upwards. This is doubtless another cause of drunkenness—the absence of nerve-currents passing down the spine to keep the muscles of the lower extremities contracted and contracting; hence the creature first loses power in its hind legs, then in its fore legs. (If the stimulus be pushed, the diaphragm only acts spasmodically; and this, together with the stimulus of the glosso-pharyngeal nerve, accounts for the various degrees of chronic alcoholism.) When drunkenness is established, if the nerve-current be stimulated to the lower portion of the spinal cord by the power of the will, if strong enough, or artificially by strychnine, the muscles will again act, and the drunkenness pass off. Thus we see that there is a three-fold cause for drunkenness: 1. The stimulus to the brain, exhausting its substance; 2. The withdrawal of nerve-currents from the lower part of the spinal cord; and 3. The accumulation of the carbonic acid and other impurities, which act more speedily and effectually because of the exhausted and inactive nerves.

Dr. Lucas does not admit that alcohol prevents waste. The administration of alcohol prevents the burning off of fats and sugars, whether derived from the food or the consequent of wasting tissue. Hence there is less carbonic acid in the breath and less urea in the urine. There is less waste eliminated, but such is not proof that there is less waste held in suspension in the blood. If there be less waste, it shows lessened activity, and is, doubtless, consequent on the depressor action of carbonic acid. To give alcohol for this purpose in active disease he therefore holds cannot be wise. The deposition of fats and sugars in the tissues and fluids of the body, consequent on the chemical combustion of alcohol, lays the foundation of numerous and chronic diseases. Alcohol in large and continued doses, he declares, is not a medicine on which we can rely. "If, in disease, we would administer a stimulant, such cannot be the remedy, because of its depressor action. If, on the other hand, we wish to give a depressor remedy or antipyrexic, alcohol cannot be the remedy, because of its stimulant action. Its stimulant action is not continuous, and the double action is exhaustive. If alcohol be useful at all, it seems to me to be in extreme weakness after long exhaustive disease. In such cases, a light unadulterated wine, diluted with water, might gently aid to tone the exhausted nerve-power; but the administration should be carefully watched and skilfully managed, even as in the case of any other medicine, lest exhaustion, on the one hand, or too great depression, on the other, be produced. If by small doses the depressed nerve-powers be restored, without being materially lowered by the small amount of carbonic acid generated, then alcohol does good. Like ammonia, it relieves in syncope. It is also evident that alcohol would act beneficially where the double action is required. Such cases are the exception, the only one presenting itself to my mind being in prolonged labour cases. Here the stimulant action would tell on the fibres of the fundus of the uterus, and the sedative on those of the cervix and os uteri. In this case, however, ergot, on the one hand, and opium and chloroform, on the other, subserve the same purpose and without the danger of exhausting the nerve-power. Medical men should not trust the administration of alcohol in the hands of patients. It is a severe irritant, and by reason of its decomposition, narcotic poison. To prescribe unlimited quantities and unknown potencies for any and every disease is unprofessional. If we think alcohol necessary, we are justified in prescribing it; but we ought to use the spirit of wine. To give brandy or port is to give we know not what. What would be thought of a practitioner ordering his patients to take a few tumblers of sea-water whenever he wished to give the iodide of potassium? or ordering them to take mineral waters whenever he wished to administer iron? Yet such is the practice with regard to alcohol. We give it for all diseases, and in unknown strengths. Such prescribing is not worthy the sages of a learned profession. Our medicines are so numerous that it is unnecessary for objectors ever to use alcohol, while the moral and religious aspects of the question require the practitioner to exercise the utmost caution in administering such a powerful and destructive drug."

It has become a yearly practice for the members of the Committee of the Temperance League, a body which was set on foot mainly through the labours of the late Mr. Tweedie, and which is distinct from the Alliance, in that it entirely trusts to persuasion in its attempts to lessen the spread of drinking customs to get a certain number of medical men to come forward to testify to the soundness of the temperance principles.

No doubt it is with some trepidation that any medical man decides to take part in any such public movements, both because all opinions given by professional men in public are apt to make their private utterances appear less weighty, and because, again, they cannot at this moment expect any great unanimity in the ranks of their own profession concerning the value of habitual consumption of alcoholic fluids. There is at present quite a sublime want of concord in opinion on this part of hygiene among our *confrères*. Some doctors not very long ago were in the habit of *keeping up* all the patients that appeared weak by the one remedy of alcohol, either in the shape of beer or wine. Spirits even are often prescribed by men of ability to patients suffering with gout and rheumatism. On the other hand, Dr. Parkes and a small knot of medical men in London seem sceptical altogether as to the value of alcohol in most diseases of debility, and entirely opposed to the use of any alcoholic beverage by persons in health.

The six following gentlemen took part in the crusade against drinking at Exeter Hall in the meeting to which we have referred as convened by the Committee of the National Temperance League—viz., C. B. Clarke, Esq., of London; Dr. C. R. Drysdale, Senior Physician Metropolitan Free Hospital; Dr. James Gilchrist, Medical Superintendent of the Crichton Royal Institution, Dumfries; Dr. J. C. Reid, Newbiggen-on-Sea; P. W. Rolston, Esq., Surgeon to H.M.S. *Impregnable*, Devonport; and C. J. Russell, Esq., of Messingham. We give a brief *résumé* of some of the views put forward, which are entitled to all respect, coming as they do from gentlemen of great experience and earnestness of conviction. A verbatim report was published in the *Temperance Record*.

Mr. C. B. Clarke, of London, remarked that all persons were unanimous as to the magnitude of the evils caused by alcohol, in filling our gaols and workhouses, and said that these evils could only be cured by total abstinence from alcoholic drinks. Moderation in drinking would not prove a cure for the monstrous evil, because it is so frequent for persons to pass from moderation to excess. There is nothing evil at all in total abstinence from alcohol. In all climates, hot or cold, wet or dry, a man can be healthier, and do his duty better without stimulants than with them. Whether in the Ashantee war or in the Red River expedition of the Arctic voyagers, total abstainers from alcohol were far less often sick than those who drank even moderately. As far as he was aware, nearly every disease to which humanity is liable may be brought on by drink. He had never seen any good arising from alcohol, and had never seen any case in which it was necessary to use it; but that he could find other articles in the Pharmacopœia just as good and not so dangerous. Some experiments had lately been made to show that alcohol is oxidised in the system, and people greedily swallowed this doctrine; and the *British Medical Journal* had a leading article to that effect. It was asserted that alcohol was burnt in the blood, and caused heat; but if you apply the thermometer to the man who has just taken alcohol, you will find that the temperature of the body has been lowered. All facts and chemical experiments are against the supposition that alcohol is oxidised in the blood. Dr. Richardson's experiments on frogs showed that the muscular strength was lowered by alcohol. As to its action in medicine, the old school recommended alcohol as a stimulant; the new one recommends it as a depresser—*e. g.*, Dr. Lionel Beale. He got on with his patients very well without alcohol.

Dr. Charles R. Drysdale, the next speaker, said that the use of alcoholic drinks, so common in modern times, was totally opposed to the experience of those who paid attention to health and disease, and asserted that the idea that healthy men and women should daily imbibe a certain portion of alcohol in some form or other was one of the gravest errors in diet which could infect the customs of any civilised country. A great medical man once said he had seen thousands of persons made sick by using alcohol, but none where diseases were caused by not drinking; and he, Dr. D., asked any medical man of large experience in hospital or private practice whether he would not endorse that opinion of Abernethy, which he fully agreed with. When he recalled the host of diseases he had seen caused by the daily drinking of some alcoholic liquid, the ghastly lives and sorrowful deaths of many such patients, he did not know how to speak with sufficient emphasis against the baneful habit of drinking. Beer, wine, and spirits were all, in his recollection, associated with such a series of sufferings, horrors, and human depravity, that he had a kind of superstitious dislike to seeing anyone he loved and respected countenancing in the slighest degree, by example or precept, these dangerous drugs. With regard to beer-drinking, so common in London, he thought, with the illustrious Haller, that "water-drinkers live longer, maintain their eye-sight, and have a better appetite than those who use beer," and said he had seen an immense amount of gout caused by beer. Alcohol is no food, but a drug, just like ether, chloroform, or nitrous oxide. It is absurd to use it as a daily drink. Mothers should not drink beer when nursing; but milk and oatmeal gruel. He agreed with Sir Henry Thompson in denouncing the use of alcohol among healthy persons.

Dr. James Gilchrist gave statistics of his experience of the treatment of the intemperate during four years in the Dumfries Asylum, of which he is medical superintendent. He observed that dipsomania is, with few exceptions, and in present circumstances, the most hopeless of all forms of insanity. He used the term in its popular sense, to mean a case in which the patient had lost controlling power to such an extent as to be unable to resent his craving for stimulants. A patient in whom there are developed other symptoms of insanity is more hopeful, because and in proportion as these symptoms secure early if not immediate treatment. The impracticable definitions of the law as to what constitutes insanity which are inconsistent with nature and fact, should be reconsidered and amended. Surely no clearer proof can be given of mental disease than the loss of self-control to such an extent that the most powerful and sacred motives fail to exert any influence on the unhappy patient so affected. It is very necessary that hospitals be provided—call them inebriate institutions, or whatever else may be determined on—for the treatment of this wide-spread, fearfully prevalent, and in present circumstances, almost hopelessly incurable disease. Their main advantage would be to secure early treatment and prolonged detention, without which no treatment can be effective or lasting.

Dr. Reid, of Newbiggen-on-Sea, said that teetotalism had not done much for him, for, albeit only nineteen months from his three-score years, he had neither grey hair nor baldness; nor did his nose possess the purple hue that brandy-drinkers had; and there were many far better specimens of humanity than he. The cause of temperance has suffered much from the ignorance of some authorities. The law had been laid down by ignorant men in the medical profession—by men who could not tell the difference between two of the commonest diseases if they were asked to pronounce it; yet these men had ventured to dictate to those who had been studying the cause and cure of disease for periods varying from ten to forty years, and they have boldly declared that on no occasion whatever should spirits be used. He who takes alcohol in moderation, and takes it constantly, injures his constitution much more effectually than he who gets on the loose once in six or nine months. He never on any account gives alcohol in any shape to children. He thoroughly agreed with the advice to women not to drink beer when nursing, and related a sad instance of the effects of such advice. He had lost all belief in alcoholic treatment of disease.

Mr. P. W. Rolston, Surgeon to H.M.'s ship *Impregnable*, said that beer used to be used in the navy, but rum, being less bulky, was now the ordinary beverage allowed to the men. In former days the men got grog thrice daily; but accidents used to occur in the evening on their going up the rigging. At length the Government cut off the evening supply, and gave a penny a day to each man instead. There are now many teetotallers in the navy. Of 800 boys in his ship 300 were teetotallers. There are 40,000 officers and men in the navy, and each receives one sixty-fourth part of a gallon of rum daily, costing £34,000 a year. It is a very sad thing to find so many promising men who give way to liquor and gradually sink into dipsomania. The only remedy is to give it up altogether, because if none is taken the patient is safe. Those who take the regulation quantity may not to the casual observer exhibit any effects, but nevertheless, these are visible, which they are not conscious of. There is often a great failure of nerve power, and the man becomes disinclined for intellectual exertion. Men are not allowed alcohol in stormy weather. Strongdrink was quite unnecessary in any climate.

Dr. J. Russell, of Messingham, said he had been an abstainer from his youth. He was grieved to see that several medical men had signed their names to a circular in favour of some sherry. Had they a fee for this? You want a healthy man, he said—give him the food, water, fresh air, and cleanliness requisite, and he does not want alcohol. He never used alcohol in the treatment of disease, and never partook of it himself.

AT THE SOCIETIES.

AT THE CLINICAL SOCIETY OF LONDON.

Friday, October 23rd, 1874.

Prescott Hewett, F.R.C.S., President, in the Chair.

Mr. Brudenell Carter described a case of

BRAIN-DISEASE SIMULATED BY OVERSTRAIN OF THE CONVERGENCE MUSCLES OF THE EYES.

The patient, a young gentleman, was interrupted whilst reading for honours at Oxford, by double vision and vertigo, followed, if the effort to read were continued or soon resumed, by sickness, palpitation, and intense headache. These symptoms were attributed to some obscure affection of the brain, and the patient was directed to leave the university without taking a degree. He remained for some time at home, under medical treatment, without improvement, and, on coming to London for further advice, was told to take a voyage to Australia and back, in order to rest his brain. He did so, but returned no better, and was then advised not to enter into business, and to abandon his engagement to marry. Mr. Carter was consulted about the case, in order that he might say whether the ophthalmoscope revealed anything abnormal in the cerebral circulation. He found the patient to be very short-sighted, and that he had never worn spectacles. In reading, he held his book seven inches from his eyes; and Mr. Carter ascribed the symptoms to inability to maintain this degree of convergence for many hours. He ordered spectacles to be worn constantly, and reading to be practised at a distance of eighteen inches. In three weeks, the patient returned cured, with his wedding-day fixed and his arrangements for entering into business completed. In his concluding remarks, Mr. Carter said that the case, though exceptional, was exceptional only in degree, and that many patients suffered from headache and other symptoms due only to impaired harmony of the ocular muscles, or to inordinate exertion of some of them. He urged that, in every case of obscure head-affection, the state of refraction, of vision, and of the muscles, should be carefully investigated; at all events, before a patient was sent to Australia, or advised to abandon his position and duties in life.

Dr. Hughlings Jackson considered Mr. Carter's paper to be as interesting to physicians as to ophthalmic surgeons. He (Dr. Jackson) referred to a case in which hypermetropia, which was an indirect cause of nervous troubles, had been, by several eminent ophthalmic surgeons and by himself, misinterpreted. It disappeared when appropriate glasses were worn. Since then, he had always considered the state of the refraction of the eyes, as well as the state of the fundus, in patients who had what might be called minor cerebral symptoms. He referred to another case he had seen with Mr. Carter, in which severe headache seemed to be fairly attributable to hypermetropia and astigmatism. He considered that cases of ocular palsy were for the study of the nature of vertigo, the simplest of all cases. It was clear, from these cases, that vertigo was a motor symptom. It was not due to double vision, as commonly supposed, since it occurred on use of the paralysed eyeball only—that is to say, under conditions in which double vision was impossible. Yet, as a matter of fact, vertigo, in physicians' practice at least, was not commonly met with in cases of ocular palsy. This was owing to the fact that, in the case of the sixth nerve, the patient, so to speak, dodged the paralysis by holding his head stiffly inclined; and, in the case of the third nerve, to the fact that the paralysed eyeball was covered by the drooping lid. In the latter case, the patient did not reel nor feel giddy, but, if he closed the good eye, and if the paralysed lid were upheld, he would, when walking, feel giddy, would reel, and might feel sick. The vertigo was due to "erroneous projection." There was a duplex condition. There was over-estimate of the range of a movement of the eyeball intended but not really performed, and action of movements of locomotion, in accordance with that false estimate, and thus overaction of them.

Dr. Poore thought Mr. Carter's case resembled cases of chronic fatigue of muscle, such as was seen in writer's cramp. As in that disease, the muscle used for prehension of the pen, the first dorsal interosseous, was put upon the stretch for hours at a time; so in Mr. Carter's patient the internal recti were put into a condition of overstrain. And, as in writer's cramp, the muscles refused to act directly the pen was put into the hand, and headache, &c., ensued, so in this patient, who really had "reader's cramp," the muscles refused to act; as soon as reading was attempted, double vision was produced, which recalled the symptoms of former attacks, and headache, vertigo, &c., followed.

Dr. Rasch had witnessed a case of vertigo, nausea, &c., simulating serious disease of brain, in which a large clot was discovered in the external auditory canal. This having been syringed out, the patient immediately recovered. He had often known syringing of the ears to relieve such cases.

AT THE ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Tuesday, October 27th.

Mr. Timothy Holmes in the Chair.

A CASE OF ABDOMINAL ANEURISM OF UNUSUAL SIZE

was related by Dr. Bakewell, of Trinidad.

A CASE OF RECOVERY AFTER REMOVAL OF A FOREIGN BODY IMPACTED IN THE FEMALE PELVIS FOR TWENTY MONTHS

was related by Mr. Barwell.

A SUCCESSFUL OPERATION FOR THE REMOVAL OF A LARGE FIBRO-MYOMA FROM THE FUNDUS UTERI

was related by Mr. Lawson Tait, of Birmingham.

The patient, whose age was 34, had suffered from a large abdominal tumour of rather rapid growth for five years. There was profuse menstruation, and frequent symptoms of pressure on the pelvic organs. The tumour was central, and reached two inches above the umbilicus; was completely solid, and movable with the uterus. It was removed by an operation on January 16th, the steps of the operation being exactly the same as for ovariotomy. The tumour was found to spring from the whole of the fundus uteri, and the part of that organ above the internal os was removed with it. Recovery was rapid and uninterrupted, and the clamp came away on the eighth day. The tumour weighed eleven pounds, and was an ordinary fibro-myoma.

November 10.

Mr. White Cooper in the Chair.

A paper was read by Mr. West entitled,

OBSERVATIONS ON THE ELIMINATION OF UREA IN CERTAIN DISEASES.

The author related cases of pneumonia, rheumatic fever, Addison's disease, diabetes, and aneurism.

It was found in pneumonia cases that when the temperature was 104·2, there were excreted 14·87 grammes of urea, and when the temperature was 100·3, the quantity of urea excreted was 20·00. In another case, where the patient died, the percentage of urea varied between 2·2 and 2·85. There was much nitrogen taken in by the patients, and the percentage eliminated was very small. It seems probable that, in pneumonia, there is excretion of the nitrogen by the kidneys taking place in some other form than that of urea. The excretion of urea seems to vary greatly in pneumonia.

In the cases of Addison's disease, the amount of urea eliminated is diminished, and this on account of the want of appetite.

In the diabetes case, the great amount of urea excreted was remarkable, as much as 57·5 grammes a day. It was not on account of the food the patient took, but on the waste of tissues. The percentage of urea is always high in fevers, and falls when the pyrexia ceases. Changes of diet in fever cause the same oscillations as in health. It would be important to ascertain the total nitrogen excreted.

AT THE MEDICAL SOCIETY OF LONDON,

Monday, November 2, 1874.

Victor de Meric, Esq., F.R.C.S., President, in the Chair.

Mr. P. Y. Gowlland showed a specimen of

A RARE FORM OF POLYPUS OF THE RECTUM TAKEN FROM A FEMALE ÆT. 41.

The woman had suffered when a child from some bleeding, but had not taken much notice of it until ten years ago, when a growth appeared, which increased considerably, and gave rise to tenesmus and bleeding. Mr. Gowlland removed the tumour, which, on examination, proved to be of the follicular variety, common among children, but rare in adults. He exhibited drawings of this and several other polypi.

Dr. Sansom exhibited

SOME GELATINE DISCS OF MORPHINE AND ATROPINE FOR HYPODERMIC INJECTION.

Each disc contained 1-6th or 1-3rd of a grain of morphine or 1-120th of a grain of atropine, and was capable of solution in a little hot water in a spoon. He advocated their use on account of their portability and their keeping better than the hypodermic solution generally used, in which fungi were apt to form.

Mr. Wm. Adams then read a paper on

A CASE OF STRANGULATED FEMORAL HERNIA REDUCED BY LARGE INJECTIONS OF OIL, AFTER STERCORACEOUS VOMITING HAD EXISTED MORE THAN THREE DAYS.

A lively discussion followed this paper.

Monday, October 26th.

Mr. Francis Mason exhibited a patient, aged 19, who had been under his observation for about five weeks, with a well-marked infecting sore on the upper part of the thigh situated over the great trochanter. The patient had a secondary eruption, and there was no other sore on any part of the body to account for it. Mr. Mason brought the case forward because the true nature of such cases was so frequently overlooked.

Mr. Mason also exhibited a child, aged 7 months, who had a congenital deformity of the right hand, which consisted of a palm with two fingers only, and these were webbed. Mr. Mason had placed a silk thread through the proximal end of the web, and this was allowed to remain for three weeks, when the perforation was found to be quite healed. The web was then divided and the wound rapidly cicatrised, the fingers being kept apart with lint. Mr. Mason showed a cast of the deformity before he had operated.

Mr. Maunder showed a girl of 15 years of age with an exostosis of the femur, which he had broken off with a large pair of forceps (borrowed from the gasfitter) without any incision. The piece had become reunited in spite of daily motion, but the great pain was relieved and free action of the leg and thigh acquired.

Dr. J. Milner Fothergill then read a paper on

THE MUTUAL RELATIONS OF THE DISEASES OF THE HEART AND RESPIRATORY ORGANS.

Monday, November 9th, 1874.

Dr. Theo. Williams communicated

A CASE OF TRANSFUSION OF LAMB'S BLOOD IN PULMONARY CONSUMPTION, RELATED BY THE RECIPIENT, DR. REDTEL, OF KÖBEN.

The author, who had well-marked tubercular consolidation of the left lung and ulceration of the larynx, accompanied by a certain amount of pyrexia and dysphagia, was transfused with lamb's blood by Dr. Hesse, of Nordhausen, on the 1st of July, and he narrated his symptoms after the operation. They were serious, and he derived no benefit.

Dr. Richardson then read a paper

ON CERTAIN TYPES OF DISEASES INCLUDED UNDER THE TERM PURPURA HÆMORRHAGICA.

He admits three forms of purpuric disease, viz.—(1) aqueous purpura; (2) saline purpura; (3) vascular purpura. Aqueous purpura was so named because in it the water of the blood is in excess, and the colloidal and crystalloidal parts are relatively diseased. There is no evidence that the actual quantity of fibrine is reduced, but it is distributed through too large a volume of water. Hence the blood, imperfectly protected by its coagulable fibrine, is ready to flow from the vessels like water from the smallest wound. It is also ready to diffuse through vessels that may be injured by a blow or by pressure. This type of purpura has been studied by the synthetical method, and comparisons were drawn by the author between the blood observed in those researches and the blood of the human subject under the disease in question. The origin of this type of the malady was traced to hereditary causes mainly, but it may arise from mental shock. Two cases illustrative of this origin were related, in one of which the symptoms came on after fright, in the other after sudden and intense grief. Saline purpura was so named because in it the blood is not surcharged with water, but is surcharged with some saline soluble substance by which the plastic collodial fibrine is held in undue solution in the water. The synthesis of this type of malady was also explained. The disease is not hereditary, but is induced by some error of diet or other cause that increases the solubility of the fibrine through the blood. The true scorbutic eruptions and scurvy of the old schools of physic come under this head. The author added that he had seen this type of purpura induced by the excessive use of chloral. Much loss of blood is not common in this type of purpura, but passive exudation from vascular parts, as from the jaws, are common with the excess of saline matter. The blood, in fact, will transude from both structures; but after it has passed from the body the fibrine will slowly separate and become pectous. Vascular purpura is a type of the disease in which the blood is not modified at all; the proportions of its water remain the same as in health, but owing to some defect in the vessels of the minute circulation, those vessels allow the blood to escape if they are subjected to any blow or strain or pressure. The nature of the vascular change is obscure: it may be a paralysis of the vessels; but the author is rather inclined to think it due to some actual structural modification of the vessels themselves.

November 16th, 1874.

Mr. Braine showed (through the kindness of Dr. Waller Lewis) one of the *employés* at the General Post Office, who had a large hypertrophied fold of the mucous membrane on each side of the frænum coming from the upper lip, and so large that when the lip was drawn tightly over the teeth the growth slipped from behind it, and, dropping down, entirely covered the upper teeth. The patient was about 18 years of age. He stated that the growth commenced about six years ago. There was no family history of any like growth.

Mr. Napier had noticed this peculiarity when there had been great irritation of the mucous membrane of the mouth. Certain teeth being absent, the edges of the other teeth irritated the soft parts, and this was the result.

Dr. Fayrer had seen something similar in another part of the body, in the scrotum, and he had called it evoid elephantiasis. It had since been described by Dr. Vandyke Carter under another name, and shown to be an affection of the lymphatics of the parts.

Mr. Sewill had seen the affection before, generally in scrofulous patients.

WARTS AND EPITHELIOMA.

Mr. Braine also exhibited for Dr. Cleveland a small tumour of doubtful character removed from a lady, æt. 74. She had always enjoyed general good health, and from her earliest recollection had had a small swelling or wart on the skin of the abdomen. About nine years ago this growth had bled a little, but did not begin to enlarge until the beginning of the present year, when, after a journey from Scotland, it grew to the size of a hazel nut, causing considerable pain and uneasiness. In the course of three or four days it presented a melanotic appearance; and when shown to Sir James Paget, he believed it to be cancerous. It was removed by the knife. A digging incision was made, and the wound freely dressed with perchloride of iron. The patient has since done well.

The President had noticed in the case of warts about the vagina and anus, that after successive removals the last growths are certainly of a malignant kind.

Mr. Sebastian Wilkinson said it should be noted that the locality from which this growth was removed was often the seat of epithelioma, and that many of these so-called warts were really epithelial growths.

Dr. Routh remarked that, as regards vaginal warts and epithelioma, the microscope gave no distinctions, for under it they were identical.

Mr. W. D. Napier then made a communication,

SOMETHING NEW, OR BELIEVED TO BE SO, IN THE SCIENCE OF DENTAL SURGERY.

After a brief allusion to the encouragement afforded by the Society towards the general advancement of science, he proceeded to treat of a case lately under his care, in which he had, by an original mode of treatment, been able to perfect a new and, as he esteemed it, desirable process of operating on the mouth without causing pain to the patient, who, in this instance, objected to the use of anæsthesia in any shape. The case, which was illustrated by casts, was somewhat rare, the teeth in both jaws having been reduced by mercurial salivation or other cause to the condition of sharp, jagged spikes, giving great discomfort and nervous irritation. The process of filing necessary to reduce them to the level of the gum was done satisfactorily by the aid of ether locally applied during the operation, until the exposure of the nerve, &c., rendered the employment of it nugatory. It was then—in lieu of destroying the nerve, which is the ordinary practice under these circumstances—Mr. Napier very cautiously and gently applied to the exposed portion of it in each tooth successively a pencil of hickory wood dipped in nitric acid, by which simple method it was rendered insensate, and the operation necessary to enable the mouth to receive artificial substitutes was completed. Mr. Napier was anxious that the principle involved should receive a fair share of attention, as he held the present system of nerve-demolition to be at variance with true science. The paper concluded with an expression of the author's hope that the merits of a better acquaintance with dental surgery would soon be recognised by others than those whose speciality it is, and he intimated his conviction that the latter would be inestimably benefited by obtaining their education and training in duly organised schools, where alone they can obtain perfected instruction in every branch of physiology that will enable them to excel in one.

Dr. R. J. Lee then read a paper on

MATERNAL IMPRESSIONS.

The author commenced by expressing an opinion that although the subject had been often discussed, yet the progress of scientific knowledge was a reason for considering it from time to time if it could be proved that there were sufficient grounds for modifying our views regarding it. The case related by Moriceau of his relation, who was affected during life with tremor of the hands in consequence of the fright his mother sustained previous to his birth from the sudden loss of her husband (who was stabbed by a servant), was taken as an example of a certain class of cases of this kind. The value of a system of classification of abnormalities in the fœtus according to anatomical details was shown to be useful in establishing the view that such abnormalities follow certain physiological laws, but that this system does not attempt to explain their cause. The necessity of defining what we mean by maternal impression was pointed out as the first step towards explaining the manner in which an impression can affect the child. There appeared to be certain effects which followed purely emotional disturbances, and others which were the consequences of impressions produced by objects of fear or disgust, while between purely emotional and objective impressions there were a great variety which affected the emotions and the senses simultaneously. Experience proved that the first and last of these classes of impressions were more commonly stated to be causes of various abnormal conditions in the child, but that such effects were exhibited in some deficiency of its intellectual and moral nature rather than in deformity or abnormality in special organs or parts of its body. In illustration of the truth of this view a few cases were selected; and Dr. Lee concluded by recommending it to the attention of the members of the Society as of greater importance than that which attempts to connect particular kinds of deformity with the object which was stated to have produced "an impression" on the mother.

IN THE LABORATORY.

CROTON CHLORAL.

In the *Journal de Pharmacie et de Chimie* Dr. R. Engel describes this preparation, and the chemical, physiological, and therapeutic properties of this substance, and his paper has been translated in the *Pharmaceutical Journal*.

Constitution.—Ordinary chloral is an aldehyd; it is the hydride of trichloracetyl, $C_2Cl_3O.H$. Croton chloral is the hydride of trichlorocrotonyl, $C_4H_2C_3O.H$, or the aldehyd of crotonic acid, $C_4H_5O.OH$, in the radical of which three atoms of hydrogen have been replaced by three atoms of chlorine.

Preparation.—Krämer and Pinner (*a*) were the first to obtain croton chloral by passing a current of chlorine into aldehyd during twenty-four hours. The action is very energetic at the commencement of the operation, so that it is necessary to surround the vessel containing the aldehyd with a refrigerating mixture, and it is only towards the end that the temperature is raised to 100° C. During all the time of the action of the chlorine upon the aldehyd, large quantities of hydrochloric acid are disengaged. The product obtained is submitted to fractitional distillation, and a liquid is thus isolated passing over between 163° C. and 165° C., which is croton chloral.

Wurtz had previously studied the action of chlorine upon aldehyd, (*b*) and had indicated among other products of the reaction, chloride of acetyl, and had shown that ordinary chloral is not produced, but the formation of croton chloral escaped him. The reason was that Wurtz caused chlorine in excess to act upon aldehyd, whilst Krämer and Pinner passed a current of chlorine into the aldehyd until it was no longer absorbed.

The production of croton chloral under these conditions is easily understood, since Kekulé has shown that the acetic aldehyd, under the influence of various saline solutions, and more easily still under that of hydrochloric acid, is condensed, with the elimination of water, into croton aldehyd:—

$$\underbrace{2\ C_2H_3O.H}_{\text{Aldehyd.}} = \underbrace{C_4H_5O.H}_{\text{Croton aldehyd.}} + \underbrace{H_2O}_{\text{Water.}}$$

Further, aldehyd, under the combined action of heat and a little hydrochloric acid, may even be combined with other aldehydes, with the elimination of water, and new compounds be thus engendered, which are themselves aldehyds.

In the action of chlorine upon acetic aldehyd a substitution is commenced in the latter, which results in the formation of hydrochloric acid. This acid determines, as has just been seen, the formation of croton aldehyd; upon which the substitutive action of the chlorine then goes on. The formation of croton chloral is thus readily explained.

Physical and Chemical Properties.—Anhydrous croton chloral is a colourless oleaginous liquid, having a peculiar odour, recalling that of ordinary chloral. It is insoluble in water, but, like ordinary chloral, it combines with water to form a crystallised hydrate. The hydrate of croton chloral crystallises in white nacreous spangles. It is slightly soluble in cold water, more freely soluble in warm water, and extremely soluble in alcohol (Krämer and Pinner). It dissolves more readily in glycerine than in water (J. Worms).

It is known that ordinary chloral is decomposed under the influence of caustic potash into chloroform and formiate of potassium:—

$$\underbrace{C_2Cl_3O.H}_{\text{Chloral.}} + KOH = \underbrace{CHO.OK}_{\text{Formiate of Potassium.}} + \underbrace{CHCl_2.Cl.}_{\text{Chloroform.}}$$

Under the same influence croton chloral breaks up into allyl-chloroform and formiate of potassium:—

$$\underbrace{C_4H_2Cl_3O.H}_{\text{Croton chloral.}} + KOH = \underbrace{CHO.OK}_{\text{Formiate of potassium.}} \quad \underbrace{C_3H_2Cl_2.Cl.}_{\text{Allyl-chloroform.}}$$

But allyl-chloroform is excessively unstable, and decomposes rapidly into hydrochloric acid and bichlorallylene:—

$$\underbrace{C_3H_3Cl_2.Cl}_{\text{Allyl Chloroform.}} = HCl \quad \underbrace{C_3H_2Cl_2}_{\text{Bichlorallylene.}}$$

Physiological and Therapeutic Properties.—According to Liebreich, (*c*) croton chloral, administered internally, rapidly produces slumber similarly to ordinary chloral, but without its use being followed, as in the case of the latter, by lowering of the pulse and respiration. Even after the administration of very high doses of croton chloral the pulse is not reduced.

The author thinks that it is not to the first product of decomposition (allyl-chloroform) that hypnotism is due. Allyl chloroform, being very unstable, breaks up immediately, and he thinks therefore the action of croton chloral should be attributed to bichlorallylene. Moreover, Liebreich has found that bichlorallylene, when administered to animals, does not reduce the circulation or respiration. Comparing the effects of chloroform and chloral on the one hand, and bichloride of ethylene and bichlorallylene on the other, he considers himself justified in asserting that whilst the trichlorinated substances act upon the brain, spinal cord, and heart, the bichlorinated substances act only upon the brain and spinal cord. In none of his experiments has Liebreich recognised any hurtful effects on the stomach or any other organs; and he reports that he has employed it very successfully in cases of facial neuralgia, the pain ceasing frequently before sleep is produced. Jules Worms, however, asserts that croton chloral is not so generally tolerated as chloral, and Georges Gay says that its narcotic action is more uncertain.

Croton chloral is hypnotic in doses of from half to one gram. It may be administered in solution in water, or in glycerine. The following is the formula employed by Jules Worms:—

Croton chloral	1 gram.
Glycerine	60 grams.
Water	60 ,,
Oil of peppermint	3 drops.
Simple syrup	25 grams.

In a paper contributed to the *American Practitioner* by Mr. Louis Diehl, of Louisville, he remarks that croton chloral hydrate differs from the ordinary chloral hydrate by its sparing solubility in cold water, and in the exceedingly irritant character of its vapour. Chloral hydrate, on the contrary, is freely soluble in water, and its odour when pure is not irritating. Nevertheless, nearly all commercial chloral hydrate has a more or less irritating odour, and it is inferred by Mr. Diehl that this is owing to the presence of croton chloral, formed either from aldehyd, contained as impurity in the alcohol, or from aldehyd generated by the action of chlorine. No experiments have, however, been made by him to prove the correctness of the inference.

Reporting upon a sample of croton chloral hydrate purchased in New York, the original source of which was unknown, he says, "It is a white, powdery substance, of a pearly lustre, apparently crystalline, and when triturated in a mortar has the appearance and feels to the touch like pulverised valerianate of zinc. Its odour reminds of ordinary chloral hydrate and iodoform; does not seem to be more pungent than that of ordinary commercial chloral hydrate, and not as much so as that of some samples I have noticed. Its taste is bitter and aromatic, recalling the odour of iodoform. It is more soluble in cold water than I should have expected from the characteristic, sparingly soluble, given it by its discoverers. Thirty minims of distilled water dissolve one grain readily. If another grain be added to this solution heat is required to

---

(*a*) *Annalen d. Chemie und Pharmacie*, vol clviii., p. 37.

(*b*) *Ann. de Chim. et de Phys.* [3], vol. xlix, p. 48.

(*c*) See *Pharm. Jour.*, [3], vol. iv., p. 510.

dissolve it, and upon cooling and standing a short time a copious crop of well-defined crystals is obtained. Subsequent experiments proved it to be soluble in between twenty-two and a half and twenty-five parts of water, at a temperature of 60° F. In alcohol it was found to be freely soluble."

From these experiments it follows that croton chloral hydrate (commercial) may be dispensed in aqueous solution of a strength corresponding to two grains in the fl. drachm, and Mr. Diehl gives the following formula :—

℞	Croton chloral hydrate	g. viij.
	Warm water	fl. ℥i.
	Simple elixir	fl. ℥vij.
Ft. solut.		

Owing to the alcohol contained in the simple elixir, a larger quantity than two grains to the fl. drachm could, if desirable, be incorporated and held in solution by the above mixture.

ON TISSUE METAMORPHOSIS.

We differ now-a-days in our views regarding metamorphosis in no slight degree from those of our ancestors. If we read through their writings we see the idea running through them like a red thread that we take food as a substitute for the materials of our bodies continually being destroyed by the process of light. You may readily understand that this view carries to excess the metamorphosis which is constantly going on in the body. For if we should always destroy as much of our bodies in twenty-four hours as the food, even as much only as the albuminous food ingested, there would be nothing left of the whole substance of the body in a comparatively short time. We look upon the subject now-a-days in a somewhat different light. We think that we take our food to generate heat and force, and that we continuously destroy only a relatively small part of our bodies, that the greatest part of the substances which we consume to generate heat and force are elements of the food which we appropriate. We have good reasons for this belief, as it is a matter of experience that we use up our food in a short way, so to speak, in that our excretions, including both the products of respiration and renal excretion, are changed in a comparatively short time, according to the character of food ingested. The quantity of carbonic acid gas excreted is changed according as we ingest the hydrocarbons, or fat or albumen, and the character of the urine is changed according as we ingest vegetable or animal food. We may get the urine of the carnivora from a herbivorous animal in a short time by feeding the herbivorous animal on meat. The urine becomes clear and acid like that of the carnivora, and in like manner the urine of a herbivorous animal is clear and acid in an entirely fasting condition because the animal becomes carnivorous against its will by living upon its own flesh.

We possess very little knowledge concerning the changes of the formed and organised substances of the body. We know that a part of the epidermis is continually being desquamated, we know that the hairs and nails, the bony structures in general are continually growing and that we remove them in pieces with scissors and knife. We know further that there is separated from certain glands not only a fluid secretion, but also whole parenchymatous cells, and that parts of the internal epithelium, as of the nasal mucous membrane, bronchial mucous membrane, tractus intestinalis, &c., are cast off at certain periods. But here, too, opinions have been carried too far. For instance, it was believed for a long time that the secretion of the gastric juice, of the digestive fluid, always followed as a result of the casting off whole parenchymatous cells from the peptic glands. What led to this idea was the fact that in rabbits, in whom the stomach is never empty, a layer accumulates between the contents and internal surface of the stomach, which consists of nothing but cell *débris*. But if we examine the gastric juice of the dog and also the freshly secreted gastric juice of man, it will be found to be a clear fluid in which formed elements only sporadically appear. So also some physiologists maintained that the cylindrical epithelium of the alimentary canal was cast off that the apices of the villi might remain free to be able to absorb the products of digestion. We know now that this is by no means the case, but that the epithelium is a necessary factor of absorption, and that profound and grave disturbances occur in the organism when the epithelium of the intestinal tract is detached to any great extent.

On the other hand, we recognise facts which signify to us that certain tissues, especially the formed elements, change but very little. Marked alterations take place in the bones it is true, so long as they are in process of growth; they diminish in some parts while new substances are deposited in other parts; but change of their solid substance, especially of their organic basis, is very limited. The lens of the eye shows occasionally an interesting and instructive appearance in this regard. There is sometimes in it a single cloudy layer, lying in the otherwise clear substance of the lens, which has so small a thickness that we may positively state that it was deposited as early as during embryonal life, and yet it has persisted for years. The persistence of corneal spots, the slowness with which cicatrices alter themselves, signify that the change of the nitrogenous substances concerns much more the fluid substances than those which have already assumed outline and form, and thus have become elements of the body.

Still it is undeniable that a certain amount of the nitrogenous substance must always be consumed, and as it appears a certain amount of the substance of our bodies must always be used up even when sufficient nutrition has been afforded. It is known that the metamorphosis of the nitrogenous matters of the body can only be checked to a certain lowest limit, no matter how the nutrition is regulated. We may feed an animal ever so abundantly with non-nitrogenous substances to limit the metamorphosis of the nitrogenous matter, to cause respiration essentially at the expense of the non-nitrogenous substances, but there remains always a certain quantity of urea which is excreted within twenty-four hours and which shows that a certain amount of nitrogenous substances must always be decomposed in the body. If the food consists simply of non-nitrogenous substances, the nitrogenous substances must of course be taken from the body as such, and the individual must perish hopelessly under such nutrition. But it is interesting to note that we can never succeed in maintaining an uniformity in the amount of nitrogenous substances in the body by administering it in the form of albuminous matter, to the same amount as that which is lost. The amount of excreted nitrogen increases to such extent that there is again a deficit in the body. Pettenkofer and Voit had to add to the food of the dogs under experiment two and a half times as much nitrogen as was excreted under a non-nitrogenous diet to maintain uniformity or equalisation.

If now the nutrition be sufficient, qualitatively or quantitatively, the substance of organism is attacked, and if this state of things continues, the individual falls into that condition which we designate as inanition.—*From Brücke's Vorlesungen über Physiologie, Vienna,* 1874.—*Clinic.*

OBITUARY.

Anderson.—On the 2nd November, at Chiswick, Thos. Anderson, M.D., late Professor of Chemistry in the University of Glasgow, aged 55.

Barnes.—On the 20th November, at 31 Grosvenor Square, London, Eliza, the beloved wife of Robert Barnes, M.D.

Barclay.—On the 13th November, at Hampstead, Deputy Surgeon-General Alex. Barclay, M.D., aged 52.

Chambers.—On the 14th November, at Cloverhill, Sligo, James Walker Chambers, M.D., Inspector-General of Hospitals, and late of the 35th Regiment, aged 63.

Chesman.—On the 9th November, Thos. Chesman, F.R.C.S.E., of Sheffield.

Dutton.—On the 10th November, James Dutton, M.R.C.S.E., of Theresa Place, Hammersmith, aged 56.

FitzGerald.—On the 30th October, at Lahore, India, R. G. FitzGerald, L.R.C.S.I., late of the 36th Regiment.

Hawkins.—On the 8th November, J. S. Hawkins, M.R.C.S.E., of Tredegar Place, Bow, aged 37.

Henwood.—On the 9th November, J. D. Henwood, M.D., of the Terrace, Camberwell, aged 61.

Le Grand.—On the 4th November, F. W. Le Grand, M.D., of Manor Road, New Cross, Deputy Inspector-General of Hospitals and Fleets, aged 69.

M'Evers.—On the 2nd November, at his temporary residence, Rushbrook, John Francis M'Evers, M.D., of Cork.

Mackern.—On the 7th November, at Eastbourne, Sussex (after a few days' illness), Thos. Mackern, M.D., of Eliot Place, Blackheath.

Nicol.—On the 10th November, J. Nicol, M.D., of New Cross, late Physician to St. John's Hospital, La Paz, Peru, also Surgeon-General to the Medical Tribunal of that city, aged 76.

Pearless.—On the 19th November, after a few days' illness from diphtheria, Charles Durrant Pearless, M.R.C.S.E., L.R.C.P.E., of the Vicarage, Sevenoaks, aged 32.

Ridge.—On the 9th November, J. J. Ridge, M.D., of Erith, aged 63.

Roots.—On the 11th November, Cecilia, wife of W. Sudlow Roots, F.R.C.S., of Kingston-on-Thames, aged 61.

Savery.—On the 2nd November, John Savery, M.D., of Roselands, Hollington, near Hastings, aged 76.

Smith.—On the 14th November, at 140 Harley Street, London, Edward Smith, M.D., F.R.S., aged 55.

West.—On the 1st November, at Cloone, co. Leitrim, Geo. B. West, L.R.C.P.Ed., Staff Surgeon Army.

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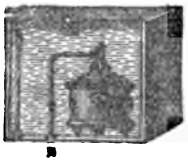

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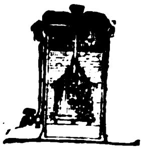

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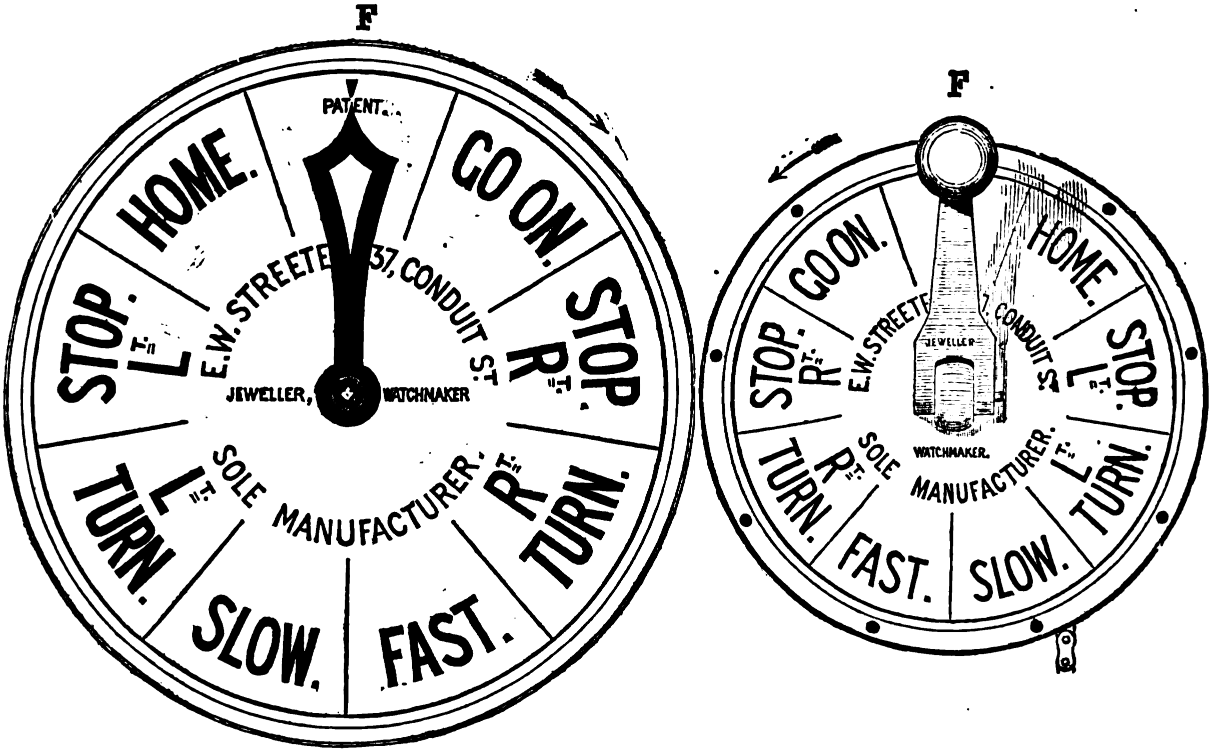

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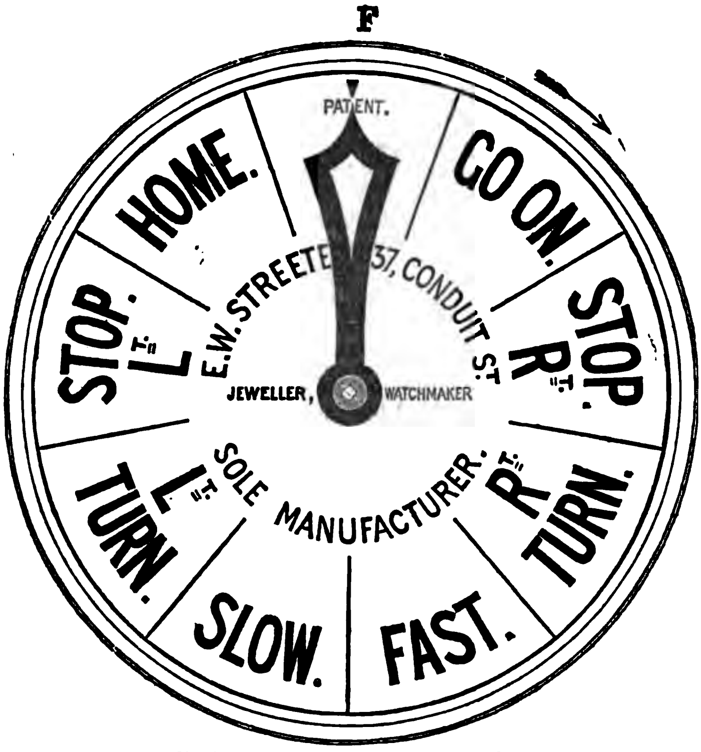

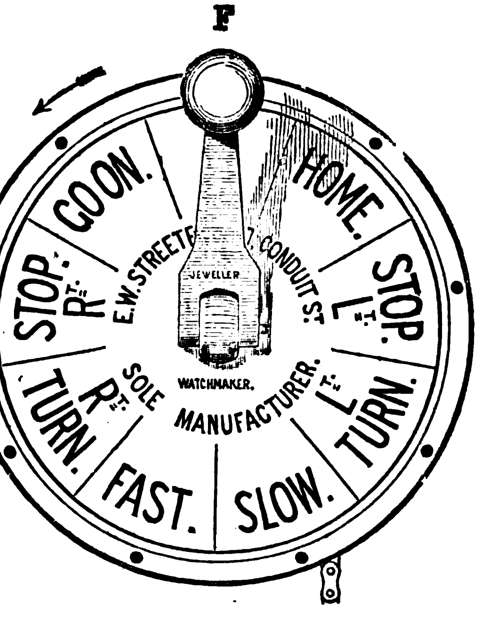

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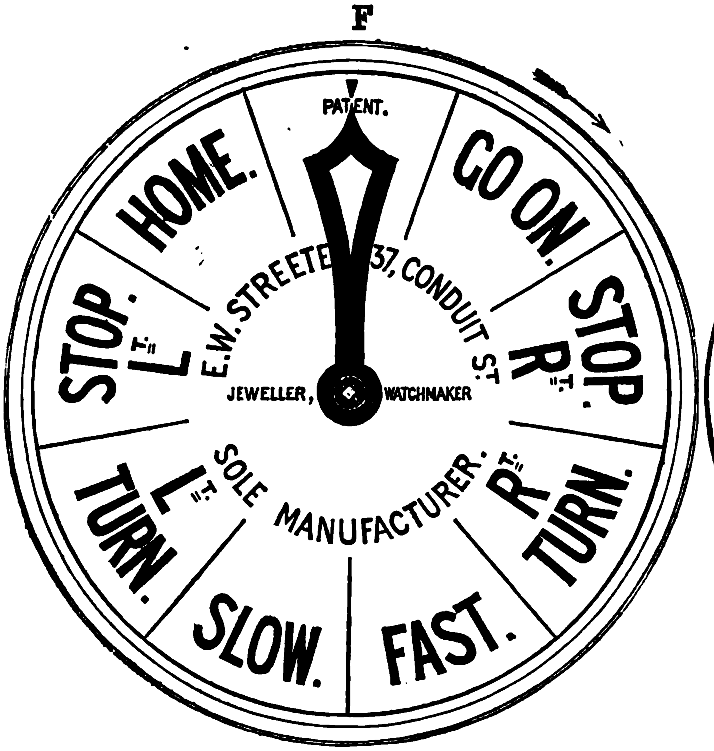

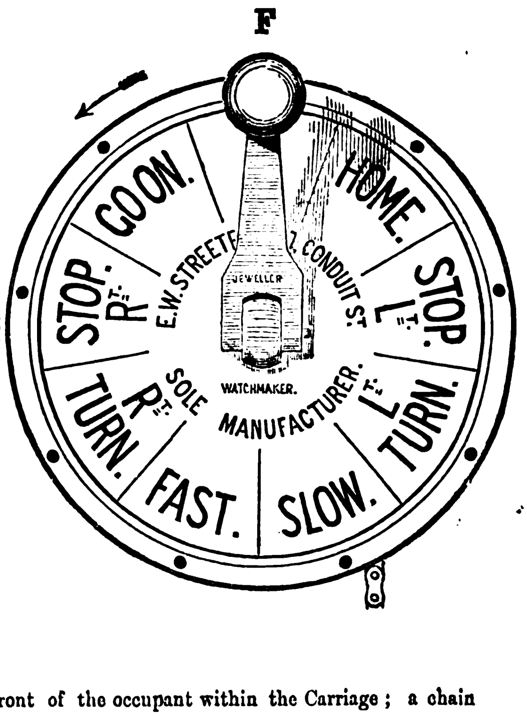

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